COTTON

JUNE SERVING THE 1942

Textile Industries

14969

100% for VICTORY

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JUN 23 1942
COPY
CENTRAL SERIAL RECORD

Like the textile industry, we are devoting our full efforts to Victory. We have doubled and redoubled our output of precision parts and assemblies for the Aircraft and Navy programs.

MARQUETTE NOVIBRA
ROLLER BEARING SPINDLE

The Marquette METAL PRODUCTS CO.
1145 Galewood Drive, Cleveland, Ohio.

LESS SPOTTING
WHEN LOOM LUBRICANT
STAYS ON
For fast-moving loom pick cams, the ideal non-throwing, non-creeping lubricant is Texaco Stazon. Equally good for other loom bearings, top rolls, comb boxes, etc.

THEY PREFER TEXACO

★ More locomotives and cars in the U. S. are lubricated with Texaco than with any other brand.

★ More revenue airline miles in the U. S. are flown with Texaco than with any other brand.

★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

★ More Diesel horsepower on streamlined trains in the U. S. is lubricated with Texaco than with all other brands combined.

FOR YOUR ENJOYMENT
FRED ALLEN every Sunday night. See your local newspaper for time and station.

SPEEDED UP to produce war fabrics *faster,* looms must have a lubricant that *stays on.* Hundreds of mills are finding just such a lubricant in *Texaco Stazon.*

Texaco *Stazon* actually *stays on* bearing surfaces. It resists thinning out, creeping, splattering . . . assures lower-cost lubrication, fewer "seconds," longer loom life.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by textile mills everywhere.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distribution points in the 48 States, or write:

The Texas Company, 135 East 42nd St., New York, N. Y.

Care for your Car ..for your Country

TEXACO REG. T.M.

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Thirty Years Ago

Parts on Draper Looms Were Filed and Fitted

As the Looms were being Built—in accordance with the Then Prevailing Practice in the Building of Nearly All Textile Machinery

Today

Draper High Speed Looms Are Built from Standardized Castings

That Are Finished to Fit Before Leaving the Machine Shop ❖ That is One Reason Why Your Weavers Can Run More Looms ❖ Why Your Fixers Can Care for More Looms ❖ Why the Looms Run Faster ❖ Why they Weave More Cloth and Better Cloth

You Can Bring Back the Weave Room Conditions of 30 Years Ago

With its Less Efficient Looms by Using Repair Parts that are Not the Equal of Draper Standardized Parts

We Are at War You Must Not Let Down Your Loom Efficiency

DRAPER CORPORATION

Atlanta Georgia Hopedale Massachusetts Spartanburg S C

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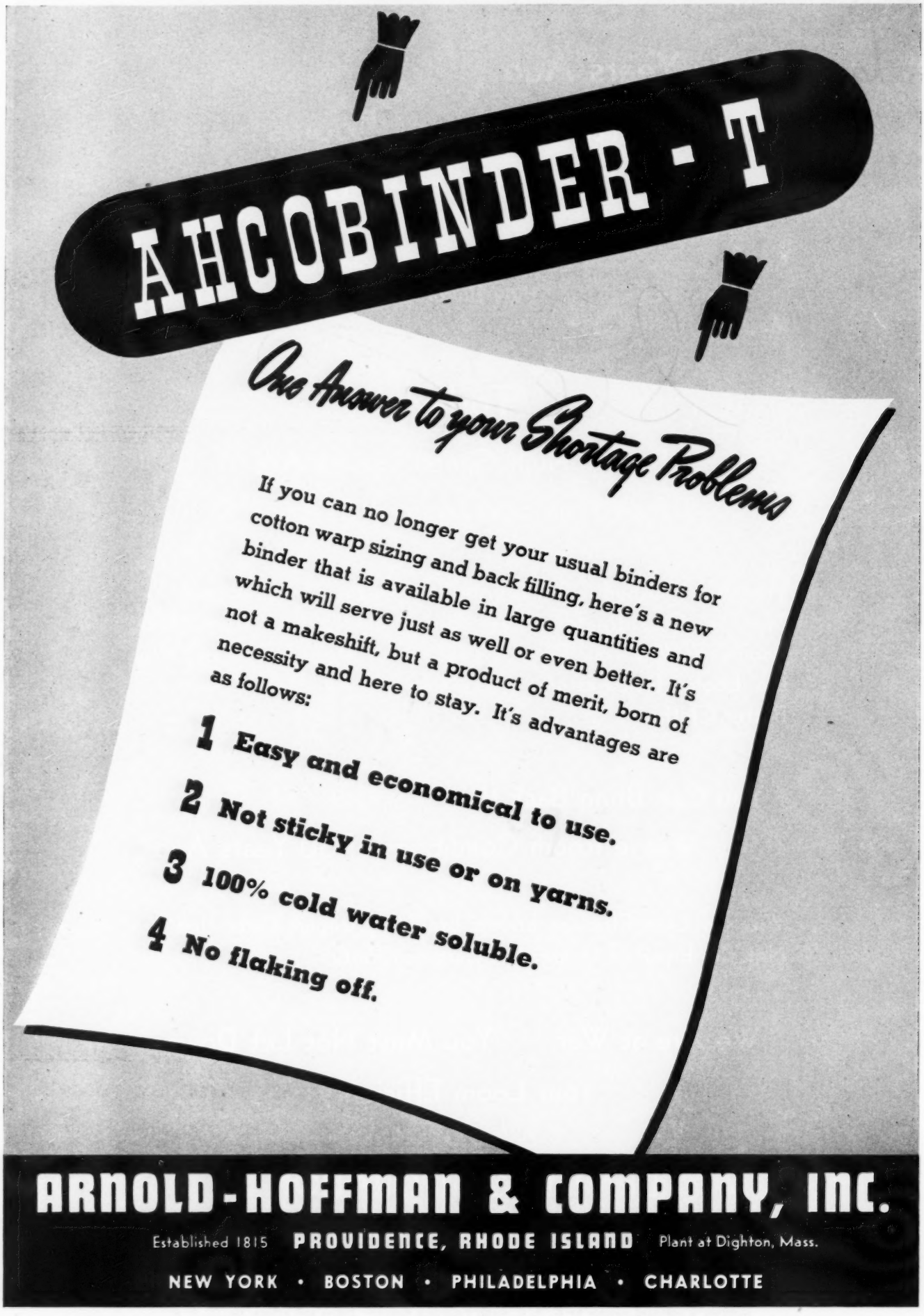
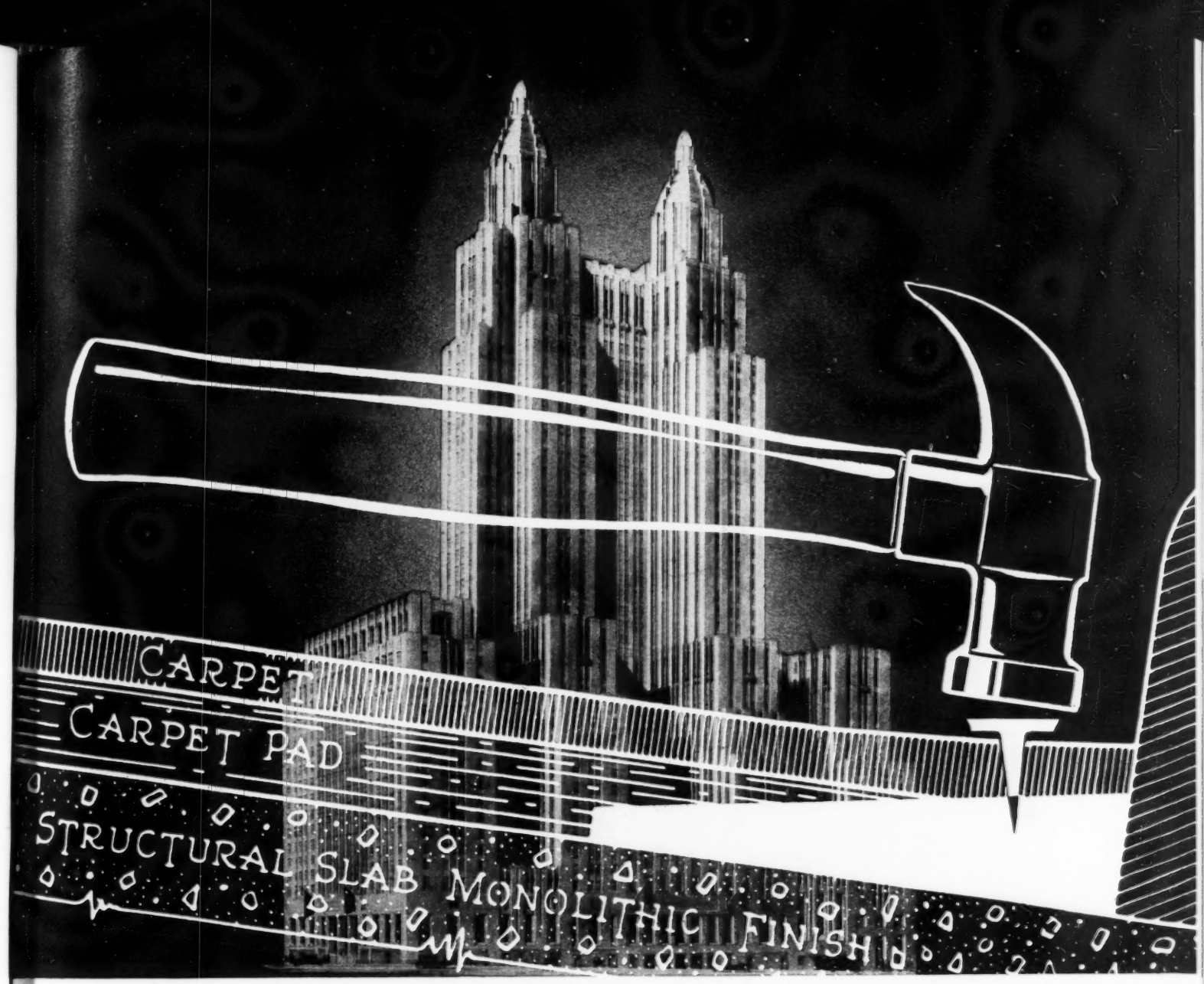

AHCOBINDER - T
One Answer to your Shortage Problems
If you can no longer get your usual binders for cotton warp sizing and back filling, here's a new binder that is available in large quantities and which will serve just as well or even better. It's not a makeshift, but a product of merit, born of necessity and here to stay. It's advantages are as follows:
1 Easy and economical to use.
2 Not sticky in use or on yarns.
3 100% cold water soluble.
4 No flaking off.
ARNOLD-HOFFMAN & COMPANY, INC.
Established 1815 PROVIDENCE, RHODE ISLAND Plant at Dighton, Mass.
NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE



These "SLEEPERS" *Checked in Before the Waldorf Opened!*

On concrete floors of the Waldorf Astoria and many another modern hotel are "sleepers" . . . nailing strips of lightweight Oxychloride Cement that hold carpeting nails in a vice-like grip. In hotels, institutions, public and office buildings wherever fire safety is absolutely necessary . . . these man-made "chemical" nailing strips are widely used.

Used also as flooring, Oxychloride Cement is not only spark-proof but also drains off the build-up of static electricity . . . valuable properties in explosive plants, on ships and in chemical plants.

Oxychloride Cement is one of the many interesting "Chemicals from Seawater" on which we will gladly supply technical data.

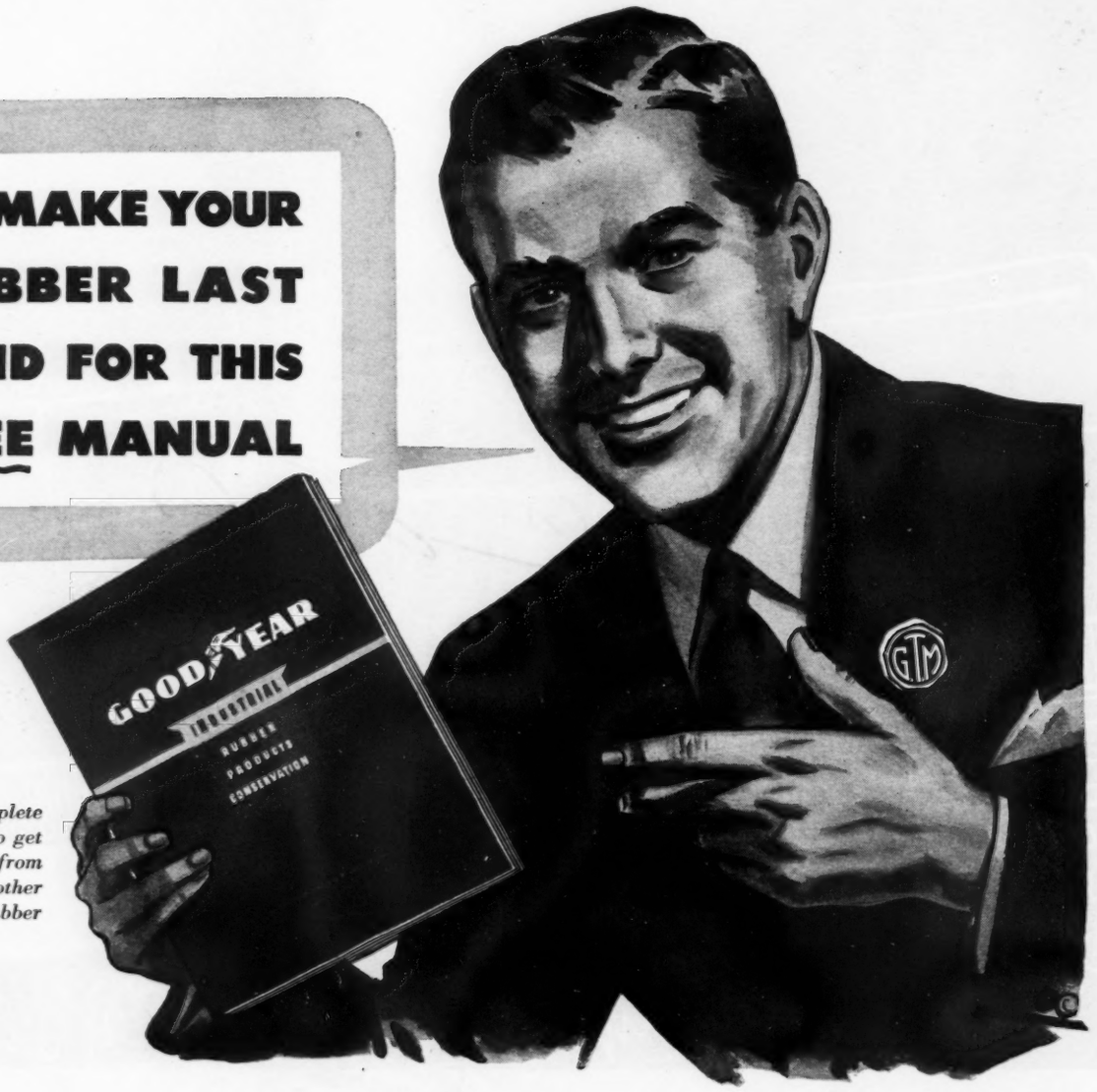
WARNER CHEMICAL COMPANY

Division of WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

CHICAGO, ILL. · GREENVILLE, S. C. · NEWARK, CAL.

TO MAKE YOUR RUBBER LAST SEND FOR THIS FREE MANUAL



—contains complete data on how to get longer wear from belts, hose and other mechanical rubber goods.

EVERY user of rubber will want this new Goodyear Industrial Rubber Products Conservation manual. It tells you how to prolong the life of your present rubber installations—how to prevent premature failures that cause the needless waste of millions of pounds of rubber every year.

It's authoritative because it is written by the G.T.M. —Goodyear Technical Man—industry's consultant on all major rubber problems. It's complete, filled with practical suggestions and diagrams covering installation, inspection, maintenance, correction of abuses, and instructions for proper repair. It's essential, even if you hold a priority, *because there's no telling what further restrictions may be put on rubber!*

Remember, improper application and maintenance can reduce the life of rubber products by as much as 50%. This manual will enable you to recognize and correct all such cases now — help you save rubber and save money. To get your free copy mail the coupon below—today.

THE GREATEST NAME IN RUBBER

GOODYEAR
MECHANICAL
GOODS

DO IT NOW

GOODYEAR, AKRON, OHIO
Dept. B-3

Kindly send me free copy of "Goodyear Industrial Rubber Products Conservation."

Name_____

Firm name_____

Address_____

City_____ State_____

WE CAN HELP YOU TO HELP win the war!

Is your card room flexible enough to meet today's conditions?
The application of Whitin Inter-Draft or Super-Draft to your present frames will enable you to meet new yarn requirements.

Are you still using two- and three-process roving?
In most cases single or two-process roving will do the job without sacrifice of quality, at equal or better production.

Are you operating more roving spindles than you need?
Super-Draft and Inter-Draft roving often enable a mill to stop up to forty per cent of their old spindles.

WHITIN MACHINE WORKS

Charlotte, N. C. WHITINSVILLE, MASS., U. S. A. Atlanta, Ga.

IF you were judging by past volume, you were right. Industry was slow to take full advantage of the weight savings offered by this lightest of lightweight metals. But you were wrong if you were thinking of experience. American Magnesium Corporation has been fabricating Magnesium Products for over a quarter of a century.

Today, complicated castings for military uses are coming out of American Magnesium foundries by the ton, where demand was once counted in pounds. And so it is with all Mazlo Products; permanent mold and die castings, extruded bar and shapes, sheet, tubing and forgings. The doing, learning and improving that come of twenty-five years of working with Magnesium Alloys now make this wartime production possible.

Manufacturers who pioneered with us, adopting Magnesium Products, are now profiting by their foresight. Designing with Magnesium is enabling them to improve performance of vital war equipment and speed up its production.

Our engineers will gladly work with you. Sales Agent for Mazlo Magnesium Products: Aluminum Company of America, 1704 Gulf Building, Pittsburgh, Pennsylvania.

AMERICAN MAGNESIUM CORPORATION

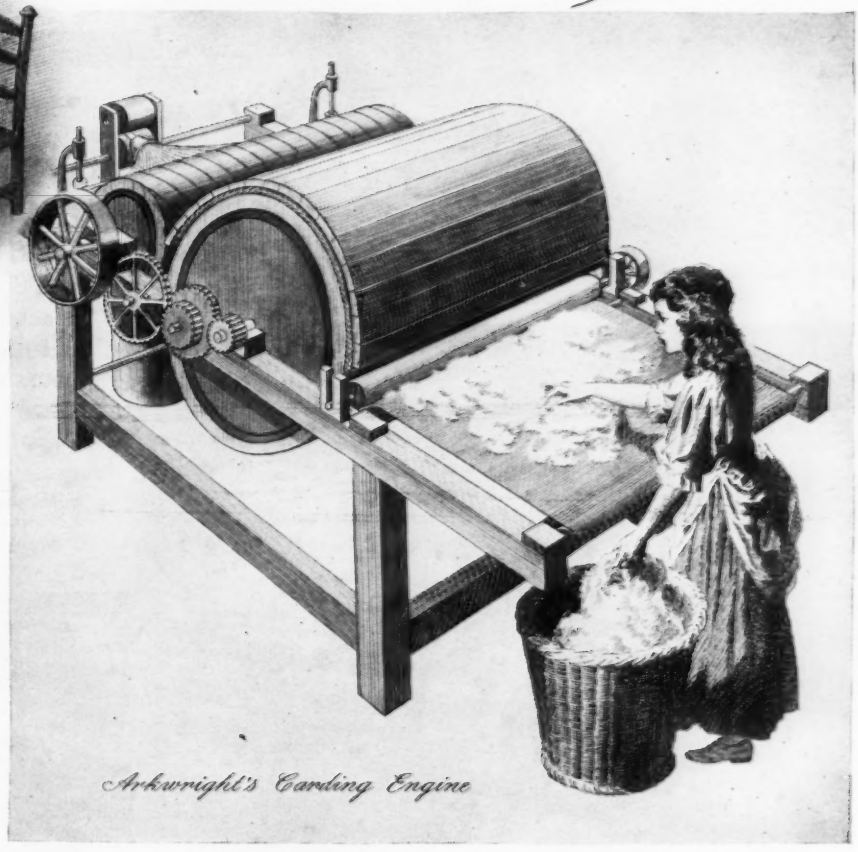
SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

MAZLO

MAGNESIUM PRODUCTS

Card Party ...1740

Here's a "card game" that went out of fashion two hundred years ago! These ladies are using so-called "hand-cards" once employed to straighten or "card" fibres of cotton or wool. But "hand cards" had to make way for progress.



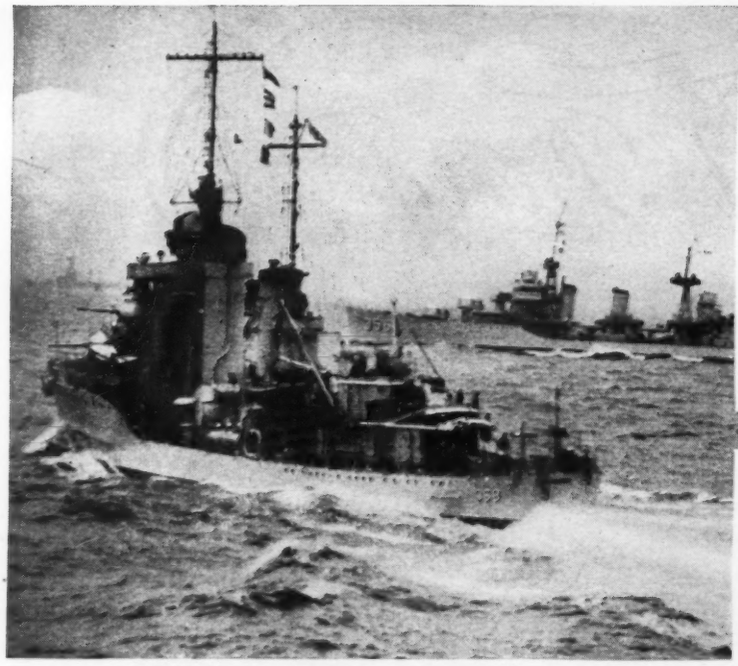
Arkwright's Carding Engine

In 1748, came the needled carding cylinder that made the carding operation *continuous*. Then, came *continuous* feeding by means of a piece of cloth mounted on rollers. Next, a doffer, a needled roller, stripped off the carded fibres *continuously*. And, ultimately, in 1775, Arkwright's carding engine, reproduced here, combined all these operations. And so it was that *continuous* carding took its place in the galaxy of textile inventions. Essentially, the history of commercial textile development is simply one of increasing efficiency —of making processes more *continuous*. Reduce starting, stopping, changing, replacing—and you have achieved textile progress. Industrial achieved that progress in the development of an entire production method that spins and processes rayon yarn *continuously* as a single thread.

Given the highly descriptive name, "Continuous Process," this method eliminates the stop-start bulk operations of washing, bleaching, treating, drying and twisting, and combines them into *continuous* steps that provide a yarn of greater uniformity, virtually free from knots and broken filaments. Obviously, such a yarn can be woven more efficiently, more *continuously*.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

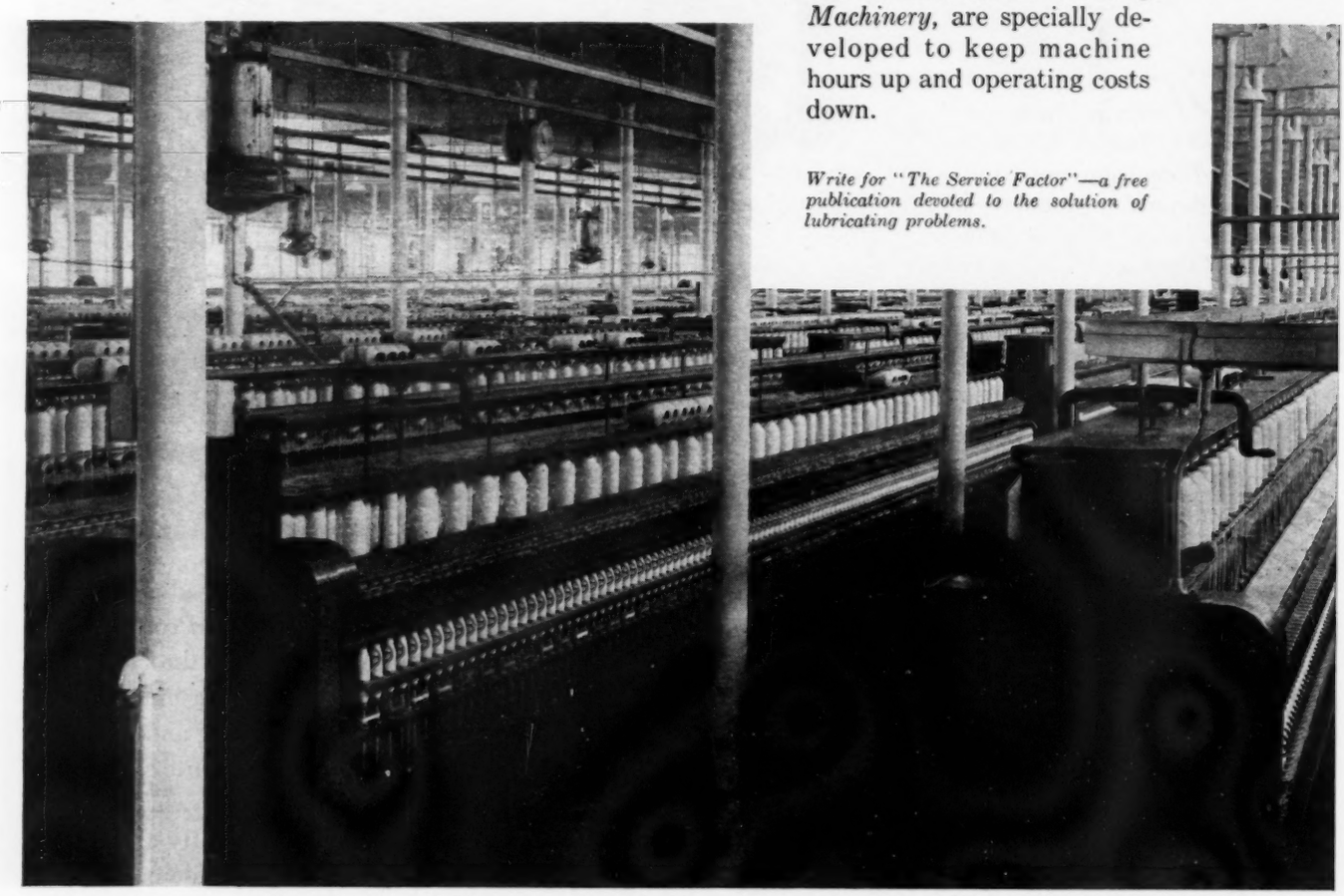
INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio — New York Office, 500 Fifth Avenue



ALL-OUT WAR EFFORT demands maximum machine performance. Adequate lubrication for capacity operation of *TEXTILE MACHINERY* is afforded by . . .

. . . SINCLAIR LILY WHITE SPINDLE OILS and NO-DRIP LUBRICANTS. These, and Sinclair oils for *Knitting Machinery*, are specially developed to keep machine hours up and operating costs down.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago · 10 West 51st Street, New York City · Rialto Bldg., Kansas City · 573 West Peachtree Street, Atlanta · Fair Building, Ft. Worth

It costs less *in the long run*

to maintain your equipment

when you specify . .

THE efficient operation of your Saco-Lowell equipment is more vital today than ever before. New equipment is not readily available . . . and the demand for more and more production from your present equipment means that every machine, although taxed to capacity, must be kept in fighting trim. Time out for repairs and replacements must be held to a minimum.

When replacements must be made the use of genuine repair parts will cost you less in the long run. A genuine part is not a substitute, for there is no difference between a Saco-Lowell repair part and the part which was assembled in your original equipment. It is an exact duplicate in design, material and craftsmanship . . . and it will render the same efficient long-lived performance as the unit which it replaces.

An ample supply of Saco-Lowell repair parts is readily available.

Saco-Lowell Shops

60 BATTERYMARCH STREET, BOSTON, MASSACHUSETTS

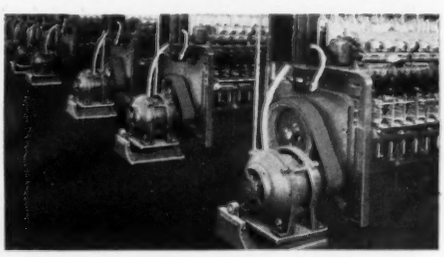
Charlotte, N. C. *Greenville, S. C.* *Atlanta, Ga.*

"Production Drive?" It's 2 to 1 on Research Leather Belting over Rubber V-Belts

This has been proved: "The life of a first quality leather belt on a pivoted motor drive is ordinarily *two or more* times as great as the life of a rubber V-belt on a corresponding drive." From *Fifty Reports on Mechanical Power Transmission from Motor Drive to Industry* by Robert Drake.

And this has been proved too: Research Belting out-delivers other leather belting by at least 3%. It is manufactured under *single* control, from green hide to finished belt. Built-in pulley-grip . . . stretch removed during tanning and finishing . . . greater resistance to flexing wear.

On "Production Drive," Research is the production belt



Research Leather Belting on Pivoted Motor Base Drive (Production Drive)

GRATON & KNIGHT CO. Worcester, Massachusetts

Graton & Knight also manufactures The Orange Line *of textile products made from G&K's own "American-tanned" Hairy Leather. Distributors listed on G&K page in* THOMAS' REGISTER

THIS IS NO. 33 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

EMPTY BOBBIN CONVEYOR (Roto-Coner*)

Many of the mills operating Roto-Coners* believe that the Empty Bobbin Conveyor is one of the most valuable features, making it easier for the operator to handle the bobbins and improving the cleanliness of the machine. Yet there are some mills which do not realize its many advantages, and we are frequently asked why it is desirable to have a conveyor.

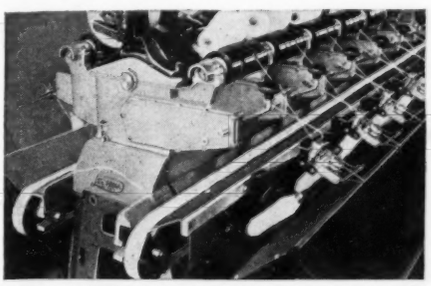


Fig. 1. Empty bobbins removed from the supply spindles are placed on the conveyors and are carried to the end of the machine where they are accumulated in empty bobbin boxes.

Slow-speed machines were not equipped with conveyors, and the empty bobbins were placed in boxes by the operator. It took a long time for the boxes to fill up, and a small quantity of full bobbins was sufficient to supply many spindles.

On the high-speed Roto-Coner*, the bobbins run out very quickly, and a greater amount of storage space is required for full bobbins. For this reason, an Empty Bobbin Conveyor (Fig. 1) was built into the machine, replacing the boxes beneath the supply spindles. This improved the appearance of the machine, increased the production of the operator and made it unnecessary for the collector of empty bobbins to enter the alley where the operator is working.

The operator of the Roto-Coner* has a continuous supply of fresh yarn at her fingertips, since with no boxes needed for empty bobbins, more space has been devoted to carrying a larger supply of fresh yarn. This supply does not have to be replenished so often, and the operator has less interference by the yarn boy distributing full bobbins.

There is one conveyor for each side of the machine, so it is convenient to use bobbins of different types on each side without danger of getting them mixed when removed from the machine.

CONING AND TUBING ON THE ROTO-CONER*

Many mills find that with their changing requirements, they have a need for converting their drum winders from coning to tubing. It is possible to equip one side of the Roto-Coner* for coning and the other side for tubing, but when the complete machine has to be changed over, it is necessary — with the Roto-Coner* as with any drum winder — to change the traversing mechanism as well as the spindles.

On a reciprocating-guide winder, this is done by changing the cams and other parts of the traversing mechanisms. On the Roto-Coner*, it is done by replacing the Rotating Traverses.

Each 20-spindle section has a shaft on each side holding 10 traverses and the ball bearings. This shaft is coupled to other sections to make up the full machine.

By removing the bearing caps and loosening the couplings, it is an easy matter to lift out each section and replace with a new section having the desired Rotating Traverses. (Fig. 2.)

Spare shafts can be stored, out of the way, on a bracket against the wall. The shaft is completely dry — there is no grease to make messy work, no lint accumulation to remove, no cleaning necessary before storage. Furthermore, the shaft is all one piece; there are no cams and small parts, as with a reciprocating-guide machine, to handle, sort and store.

When changing from coning to tubing it will also be necessary to replace the cone holders with spindles for tubing. It will not be necessary to remove the spindle holder arms.

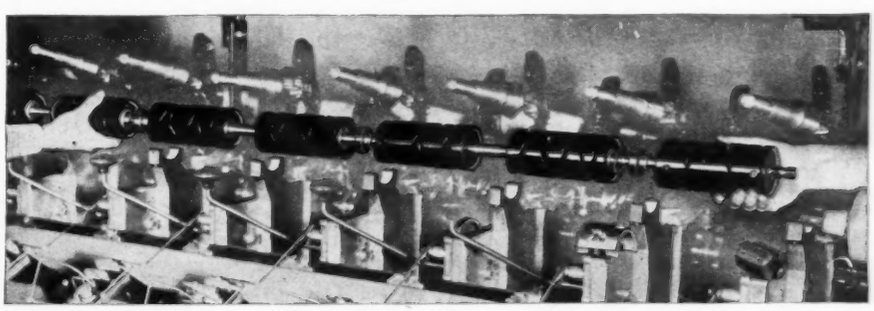


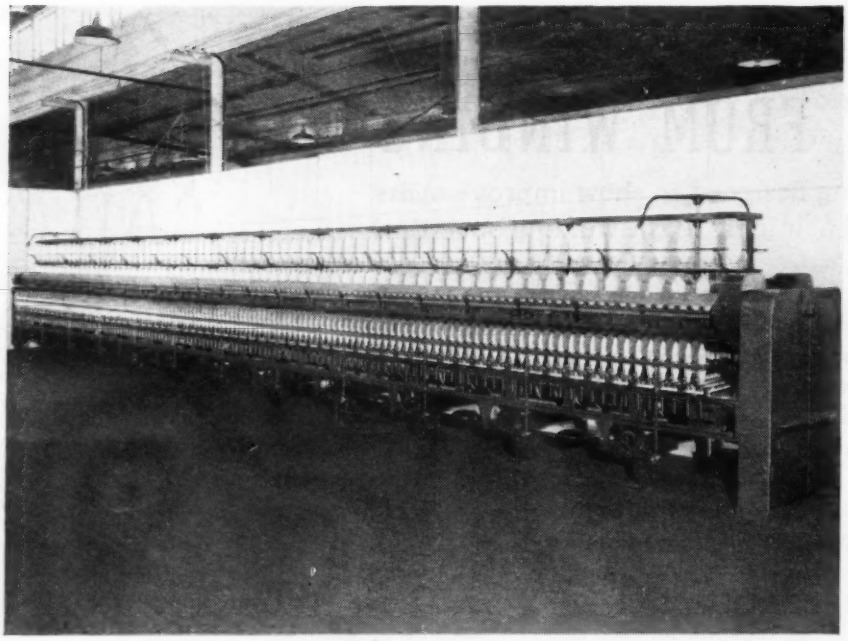
Fig. 2

See our Catalog in TEXTILE YEARBOOK

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA



When You Use GOOD Spinning Frames

THE engineering and designing organization of a textile machinery manufacturer is particularly important as these manufacturers are spending millions of dollars annually in constantly improving, constantly modernizing their equipment for the mills.

This development work is particularly noticeable in recent developments in spinning and twisting frames designed to improve the breaking strength and evenness of yarns and to increase the flexibility of the spinning room.

Whether you are using recent frames or older frames, maximum production and constantly high-quality yarns demand that you use the BEST ring travelers and the CORRECT TYPE of ring travelers for your particular needs.

Remember that your travelers, the "focal point of good yarn", can make or break the efficiency of your frames. That's why so many of the industry's leading mills rely entirely on U. S. Ring Travelers—always uniform in shape and weight, precision-made of the toughest and most durable alloys obtainable, and designed and made to insure smooth production and even yarn under EVERY condition. For U. S. makes

"A Traveler for Every Fibre"

UNIVERSAL RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED HE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND
WIRE TRAVELERS

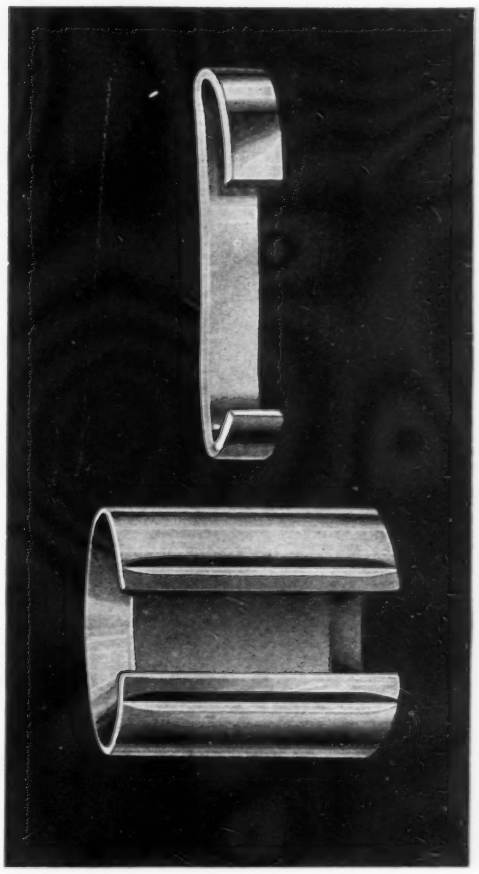
Top Performance Demands GOOD TRAVELERS

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn; there are no angular edges to flatten the end . . . no split ends in throwing rayon and silk . . . no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos and kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.

Ask for information also on the Ne-Bow Patented Vertical Ring Traveler, which has definite advantages for particular uses.

Samples for your exact requirements submitted upon request. Write direct, or contact your nearest representative.

Sealed metal containers guarantee that your U. S. Travelers will reach you in perfect condition, with no tampering or loss in count.



The Bowen Patented Bevel Edge Travelers

U.S. RING TRAVELER CO.

U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

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STANDARD TRAVELERS

A Satisfied Customer writes:
"Those Tuff-Special Fancies are wonders. They have reduced my stripping waste so greatly that the superintendent asked me to explain the 33⅓% difference this year under last year. I could and did give entire credit to your Fancies!"
TUFF SPECIAL

A NEW FOUNDATION - that is absolutely uniform to take the place of leather in Fancies and Hand Cards

WE have always pointed with pride to our Fancies, years having been spent in producing a particular type of leather to accomplish certain and necessary results. Yet in the finest of leather there is chance for variation in tensile strength, in "stretch," in pliability, and in uniformity; laps or joints could not be avoided. Neither could the effect of oil which caused it to over-stretch.

We are proud of the record of TUFF-SPECIAL, for all these faults are completely eliminated as a result of constant research work. This new product is wholly owned and controlled by Howard Bros. So we are able to offer you a perfect foundation for thickness, uniformity, absolutely oil- and water-proof, without hard and soft spots, and completely free from laps or joints — a combination that means perfection in a Fancy.

All the above is being demonstrated in hundreds of mills which are now sending repeat orders. *You, too, should have the same advantage!*

HOWARD BROS. MFG. CO.

WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N.C. **Branch Offices:** Philadelphia, Dallas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada

CARD CLOTHING is essential for DEFENSE
The wool of 10 sheep must be carded to outfit each soldier!

PRODUCTS: *Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants • Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted-Eye and Regular Wire Heddles.*

An ounce of Prevention Now is Worth 10 Lbs. of Cure Too Late

More production NOW. That's what the Victory Program demands. If you're already running three shifts, how can you increase production still more?

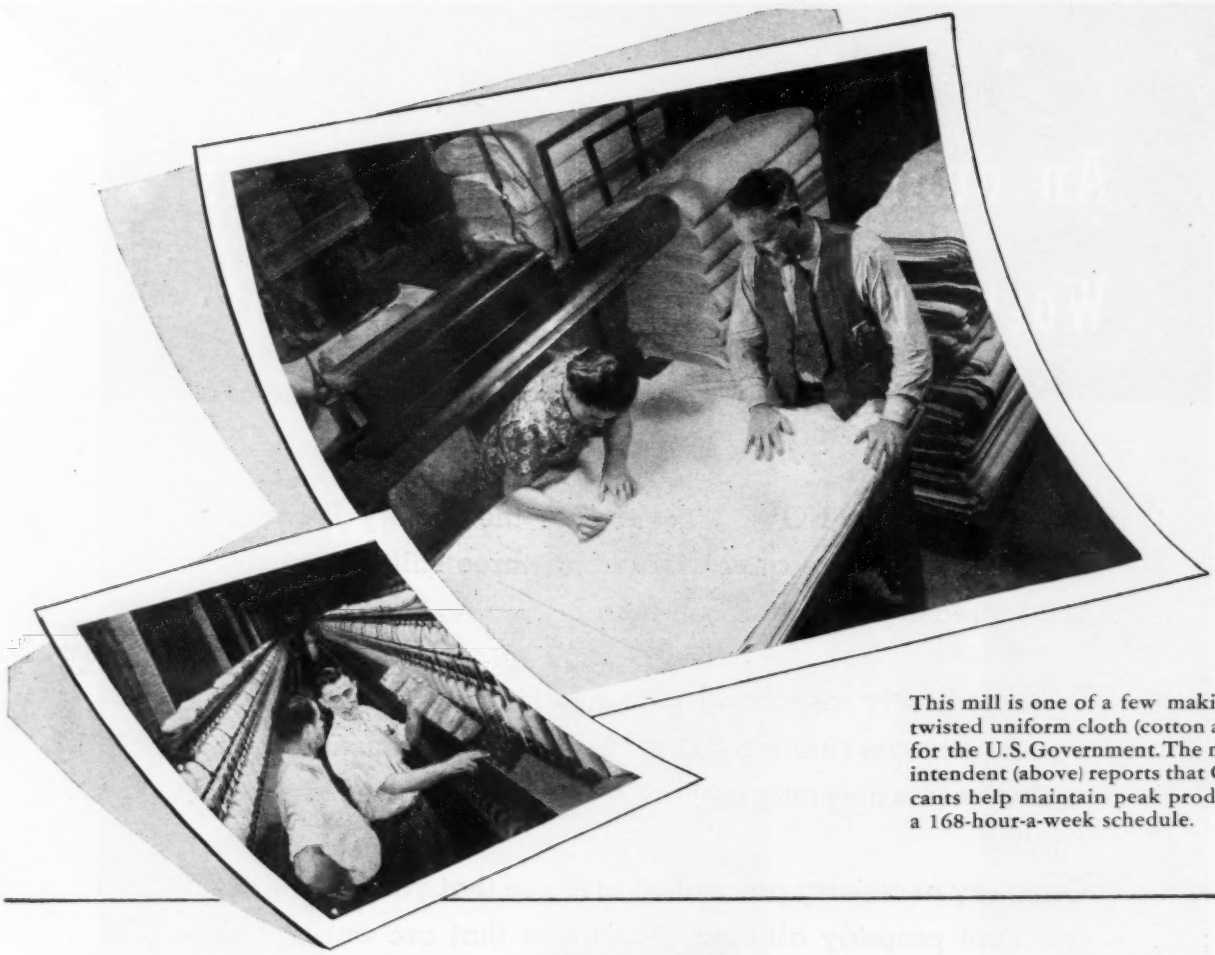
By periodically inspecting your machines to see that they are in first class running order. A few minor adjustments or replacements now may prevent serious breakdowns later on.

One very necessary precaution is to see that your machines are kept properly aligned. Machines that are out of line vibrate excessively, causing premature wear on all parts, an inferior product and loss in output.

Make your inspections thorough. If you use H & B equipment, let an experienced H & B service man look it over. He can quickly tell what is necessary to keep it running at maximum efficiency.

H & B AMERICAN
TEXTILE MILL MACHINERY
Boston Office: 161 Devonshire Street; *Atlanta Office:* 819 Citizens & Southern National Bank Building.

MACHINE COMPANY
PLANT AT PAWTUCKET, R. I.
Charlotte Office: 1201-3 Johnston Building; *Export Department:* United States Machinery Co., 115 Broad Street, New York, U. S. A.



This mill is one of a few making heavy, twisted uniform cloth (cotton and rayon) for the U.S. Government. The mill Superintendent (above) reports that Gulf lubricants help maintain peak production on a 168-hour-a-week schedule.

"Gulf Quality Lubricants are helping us maintain uninterrupted production of this 'Government' cloth"

says textile mill Superintendent.

"With proper lubrication every mill department runs smoothly on a 168-hour-a-week schedule."

"PROPER lubrication with Gulf quality oils and greases is the basis of our effective preventive maintenance program, which enables us to maintain maximum output on a 168-hour-a-week schedule," says this mill Superintendent. "Gulf lubricants contribute to the efficient operation of all our equipment, and help us avoid production delays caused by breakdowns and mechanical troubles."

The *production value* of Gulf quality lubricants shows up today — when machines must be pushed without let-up on multiple shift schedules. For severe service proves the *greater stability* and *endurance* of these lubricants! They stand up and safeguard vital moving parts under continuous peak-load operating conditions — conditions which often cause excessive wear, breakdowns, and below-standard machine performance.

Let a Gulf engineer demonstrate to you—in your mill—how Gulf quality lubricants provide an extra margin of protection for your equipment—and help you secure uninterrupted production.

Gulf quality lubricants are quickly available to you through 1200 warehouses located in 30 states from Maine to New Mexico. Write or 'phone your nearest Gulf office today.

GULF OIL CORPORATION
GULF REFINING COMPANY

GULF INDUSTRIAL LUBRICATION

GULF BUILDING
PITTSBURGH, PA.

OIL IS AMMUNITION — — USE IT WISELY!

A VERSATILITY You Can Use for War Production

THE versatility and large capacity of Franklin Process Yarn Dyeing Service, which was used in the making of these home furnishing fabrics, is yours to command for defense production. Using our service, you don't have to wait for yarns to be spun from dyed stock. We have a large supply of natural yarn in all our plants which we can dye, twist and wind to your specifications on short notice. Quicker shade corrections and more accurate matching of shades also speed up deliveries and improve quality.

Consult us for prompt solutions of your defense production problems.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

★ Providence, Philadelphia, Greenville, Chattanooga; New York Rep., 40 Worth Street; Chicago Rep., 100 W. Monroe Street.

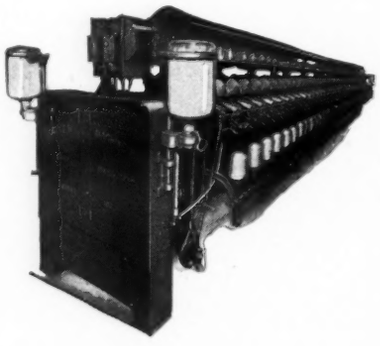
In these days of "conversion", no one knows what the future holds as to manufacturing requirements. Therefore it is well to be prepared for tomorrow with a FLEXIBLE winder—the Foster MODEL 102.

This machine can be readily and inexpensively equipped to wind any one of the following:

CONES, either for knitting or warping, 3°30′ and steeper tapers. Their uniform density assures uniform delivery. No chafed yarn because of the micarta ball bearing shell at the small end of the cone. No ribbon wind.

DYEING PACKAGES, on ⅜" or larger diameter tubes. Uniform density and no ribbon wind promote uniform dyeing.

TWISTER PACKAGES ON WOOD TUBES, for use in place of spools. May be wound up to 9" diameter and 7" traverse, holding up to 5 lbs. of yarn. Reduce twister operating costs, improve quality by superior slubbing and by winding packages at constant speed with uniform tension.



SHORT TRAVERSE CHEESES in *standard* sizes —3¼" or 2¼" traverse.

The Foster Model 102 is also flexible in that it can be made to produce 9 different angles of wind from 9° to 18° simply by changing 4 small gears and thus producing the best package for any count or type of yarn.

Ask for Circular A 91

FOSTER MACHINE CO.
WESTFIELD, MASS.

Southern Office, Johnston Bldg.
Charlotte, N. C.

FOSTER 102

FOR WINDING COTTON • WOOL • WORSTED • MERINO • MERCERIZED • SPUN SILK & SPUN RAYON YARNS

There's a difference!

The lucky penny... *a symbol of luck left to chance*

Gaylord Boxes

The Gaylord seal...*a mark of* PLANNED *dependability!*

- Corrugated and Solid Fibre Shipping Containers
- Folding and Paraffined Cartons
- Kraft Paper Bags and Sacks
- Kraft Wrapping Paper and Specialties

GAYLORD CONTAINER CORPORATION

General Offices: SAINT LOUIS

New York · Chicago · San Francisco · Atlanta · New Orleans · Jersey City · Seattle · Indianapolis
Houston · Los Angeles · Oakland · Minneapolis · Dallas · Jacksonville · Columbus · Fort Worth
Detroit · Tampa · Cincinnati · Des Moines · Oklahoma City · Portland · Greenville · San Antonio
Memphis · Kansas City · Milwaukee · Bogalusa · Weslaco · Greensboro

Like the rugged Americans who wear it
COTTON CAN TAKE IT!
THE BEST WORK CLOTHES in the world are here for the world's best workmen. Strong, sturdy, washable cotton work clothes that can take the pounding pressure of war production.
Work clothes that can stand the wear and tear of grime and sweat, and come back from the wash restored to freshness, ready to go again.
Every workman knows the definite sense of physical well-being, of increased efficiency, that fresh clean work clothes bring.
In factory and behind plow – thanks to cotton – American workmen can meet today's challenge in fresh modern work clothes that help to keep them in fighting trim.
COTTON FRESHNESS AND FIGHTING TRIM GO HAND IN HAND
At work, at home, at play, you are at your best when fresh and clean.
COTTON . . . tough, washable, lasting, brings soap-and-water freshness at small cost and little effort.
SIMPLE and easy to wash. No complicated instructions needed. Cotton is even stronger when wet than dry. Exact pre-shrinkage protects its fit and style. Boil, scrub and wring it when necessary. Cotton can take it.
HEALTHFUL – Outside freshness helps maintain inside health. Cotton can stand heat and washing to make it sterile.
THRIFTY – Cotton more than repays, with long wear and sturdy service, the simple care that keeps it fresh.
NATIONAL COTTON COUNCIL OF AMERICA
COTTON-TEXTILE INSTITUTE
Cotton Freshness FOR FIGHTING

Cotton Work Clothes Take the Spotlight

War has glorified work clothes.

In the above page advertisement appearing in LIFE on June 29, 12,000,000 cotton farmers and the American cotton industry pay tribute to our army of workers. Nation-wide tie-in with this promotion by stores that supply work clothes will be a timely and inspiring gesture to the nation's war production forces,

Use window and store displays, newspaper and radio advertising to turn the spotlight on your work clothes department. Join the cotton industry in a national salute to America's workmen during the Fourth of July period.

TO SELL MORE COTTON *Get Fresh* **IN YOUR ADVERTISING**

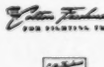
NATIONAL COTTON COUNCIL ★ COTTON TEXTILE INSTITUTE

TO SELL MORE WORK CLOTHES *Get Fresh* **IN YOUR ADVERTISING**

Take advantage of these free helps to tie in your window and store displays, and your advertising, with this nation-wide promotion of cotton work clothes.

1. Newspaper layout with mats for tie-in with magazine promotion. Designed to head up your work clothes advertisements in page or smaller space.

2. Easel mounted copy of advertisement in June 29th issue of *Life Magazine* shown on this page.



3. Mat of logotype slogan carried in all magazine advertisements. Available in 2-column, 4-column, and 6-column widths.

4. This attractive two-color poster (size 19 x 24) for your window and counter displays gives you a direct tie-in with the page advertisement in Life.

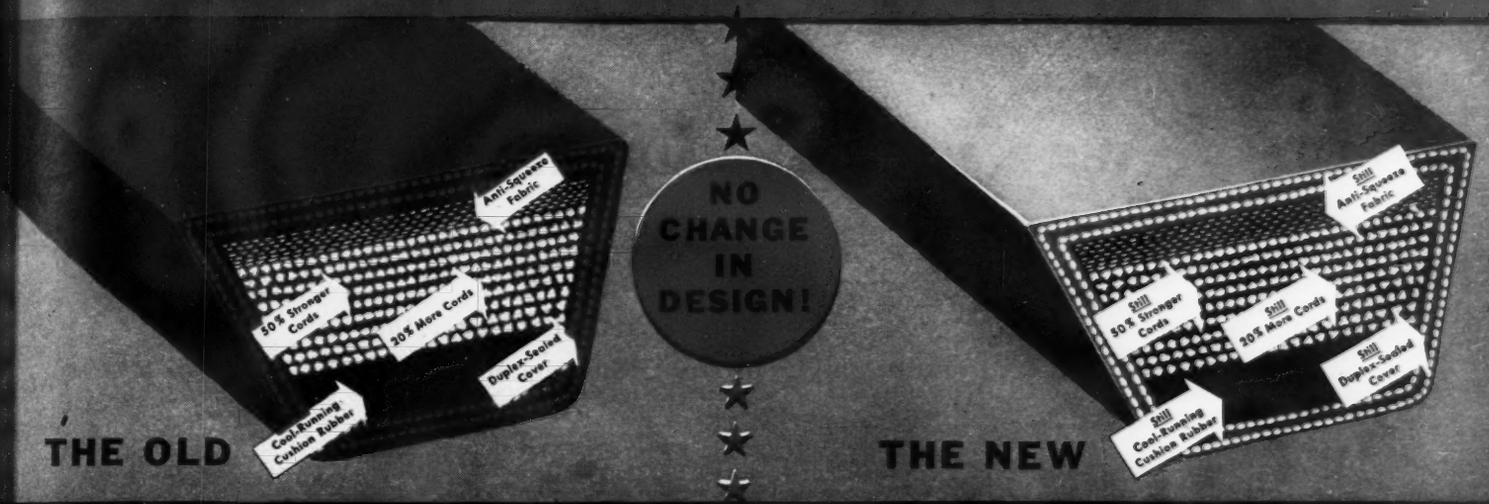
5. Radio shorts in script form for use in regular radio advertising or as spot announcements.

6. Electrotype of American cotton emblem (one-half inch, inch, and one and one-half inch) for use on labels and tags, and in all printed advertising.

Orders must be received by June 15 to assure delivery. Address all requests to National Cotton Council, Box 18, Memphis, Tennessee

"This is one of a series of advertisements running in trade papers, merchandising the cotton industry's advertising campaign to retail stores."

Announcing A New Uniform for the famous Red Belt



TEXROPE Goes to a war-time black!

YOU STILL GET . . .

1. The 50% stronger cords made possible by the sensational new Flexon process.
2. The 20% more cords that help give Texrope Super-7 V-Belts their extra "muscle".
3. The increased life provided by Texrope's shock-absorbing, cool-running rubber cushion.
4. The extra protection against grit, grease and dampness of the duplex-sealed cover. The *only* thing changed in cover design is the color!

WHAT: It's a change in Texrope* Super-7 V-Belt *color* . . . from its well-known red to a war-time black. The *only* change in design is in color — and the color change is only skin-deep.

WHY: To free additional stores of red-pigmented rubber for meeting America's special and growing war-time needs, Allis-Chalmers gladly surrenders — on its own initiative — the red surface pigmentation of Texrope V-Belts.

WHEN: Texrope V-Belts are being produced in black *now* . . . and with stocks of red belts on hand you are assured of no curtailment in supply or in the range and number of sizes available.

Texrope's loss in identifying color is Uncle Sam's gain. That's right and proper. And *your* loss is zero. *Every last one of the famous Texrope design features remains the SAME!*

Today, when your production depends on your V-Belt equipment, get *all* the advice and help that's yours for the asking at your Texrope dealer or nearby Allis-Chalmers district office. Or write Allis-Chalmers, Milwaukee, Wis.

*Trade mark registered U. S. Patent Office. Texrope Super-7 Belts are the result of the co-operative research and design genius of *two* great companies — Allis-Chalmers and B. F. Goodrich — and are sold exclusively by Allis-Chalmers. A 1516

Available in all sizes ½ hp to 2,000 hp

ALLIS-CHALMERS
MILWAUKEE · WISCONSIN

WE WORK FOR VICTORY — WE PLAN FOR PEACE

Announcing the

DU PONT ELECTROCHEMICALS DEPARTMENT

formerly

THE R. & H. CHEMICALS DEPARTMENT

With the same products . . . the same policies . . . the same personnel you have known in the past.

As of JUNE 1, 1942, The R. & H. Chemicals Department of Du Pont will be designated as the Du Pont Electrochemicals Department. This involves no change in the products you use, the policies you know or the people who serve you. The same experienced group of chemists, engineers and others will continue to further your interests through research, development, control, service and production. The development of new and better chemicals will remain a primary objective.

The products of the Electrochemicals Department will be, as before, a line of specialized chemicals derived principally from salt. In addition, it will continue to manufacture other specialties such as formaldehyde and its derivatives, polyvinyl alcohol, polyvinyl acetate, and ceramic colors and decorations.

The products of the Du Pont Electrochemicals Department are important in practically all branches of industry:

Chlorinated Solvents—for dry-cleaning, metal degreasing, extraction of oils and many other uses.

Peroxides—for bleaching, pharmaceutical and cosmetic preparations, general oxidation purposes.

Cyanides—for steel treating, electroplating, metal cleaning, fumigation, organic synthesis.

Refrigerants—for domestic and commercial refrigeration units.

Sodium, 99.9%—reactive chemical for industrial and laboratory work.

Formaldehyde and its Derivatives—for plastic manufacture; disinfecting; embalming fluid, treating paper, leather, textiles; chemical synthesis.

Electroplating Chemicals and Processes—for decorative and protective coatings on metal parts.

Ceramic Materials—for manufacture and decoration of glass, china, tile, terra cotta, porcelain.

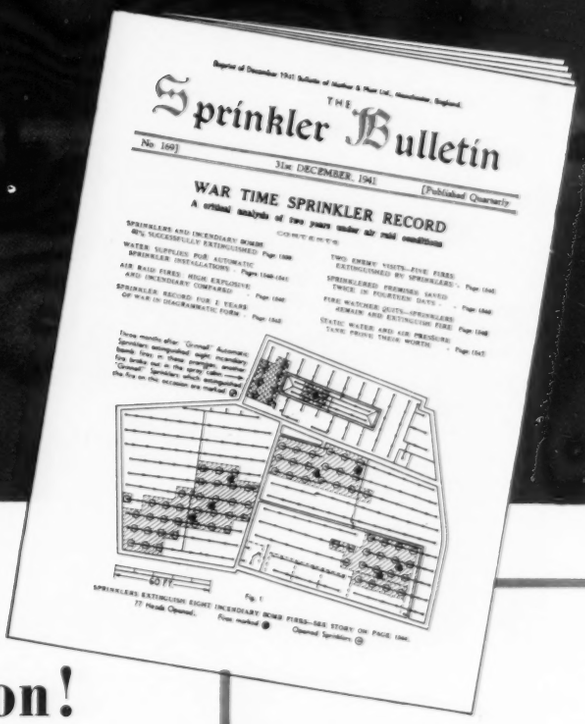
Miscellaneous Chemicals—for Plating, Refrigeration, Plastics, Ceramics, Extermination, Rubber, Textile, Leather, Paper, Pharmaceutical and Process Industries.

Our Technical Service will continue to cooperate with you in every way possible. You may find it even more helpful in today's emergency. Technically-trained men are at your service with the practical experience necessary to answer your questions on the use of specialties and specialized electrochemicals. They are ready to work with you in your plant or in our research laboratories.

DU PONT
REG. U. S. PAT. OFF.

Established 1802

E. I. du Pont de Nemours & Company, (Inc.)
Wilmington, Delaware



England's Report on Sprinkler Fire Protection!

From the scene of history's worst fire perils comes an amazing report.

It is an authentic record of the performance of automatic sprinkler fire protection in actual air raids . . . and it shows that *no premises fully protected with sprinkler systems and dependable water supply have been destroyed by incendiary bomb fires in England!*

250 incendiary bomb 'incidents" in sprinkler-equipped buildings throughout industrial Britain form the basis of this report. In 12 closely-printed pages, typical buildings, their protective equipment, bomb locations and extent of damage are described and illustrated in detail. A summary of all "incidents" is included.

Reprinted for the first time in this country, this bulletin throws new light on protective measures against impending incendiary bombings on our own continent. It is offered to aid *you* in protecting *your* plant or building!

Write for complimentary copy of this timely study, now made available by Grinnell . . . the pioneers and consistent leaders in automatic sprinkler fire protection. Grinnell Company, Inc., Executive Offices, Providence, R. I.

GRINNELL
AUTOMATIC SPRINKLERS
For Production Protection

CONTENTS

Sprinklers Completely Successful in 82% of Incendiary Bombing "Incidents."

★

Air Raid Fires: High Explosive Compared with Incendiary.

★

One Plant . . . Two Enemy Visits — Five Fires Extintinguished by Sprinklers.

★

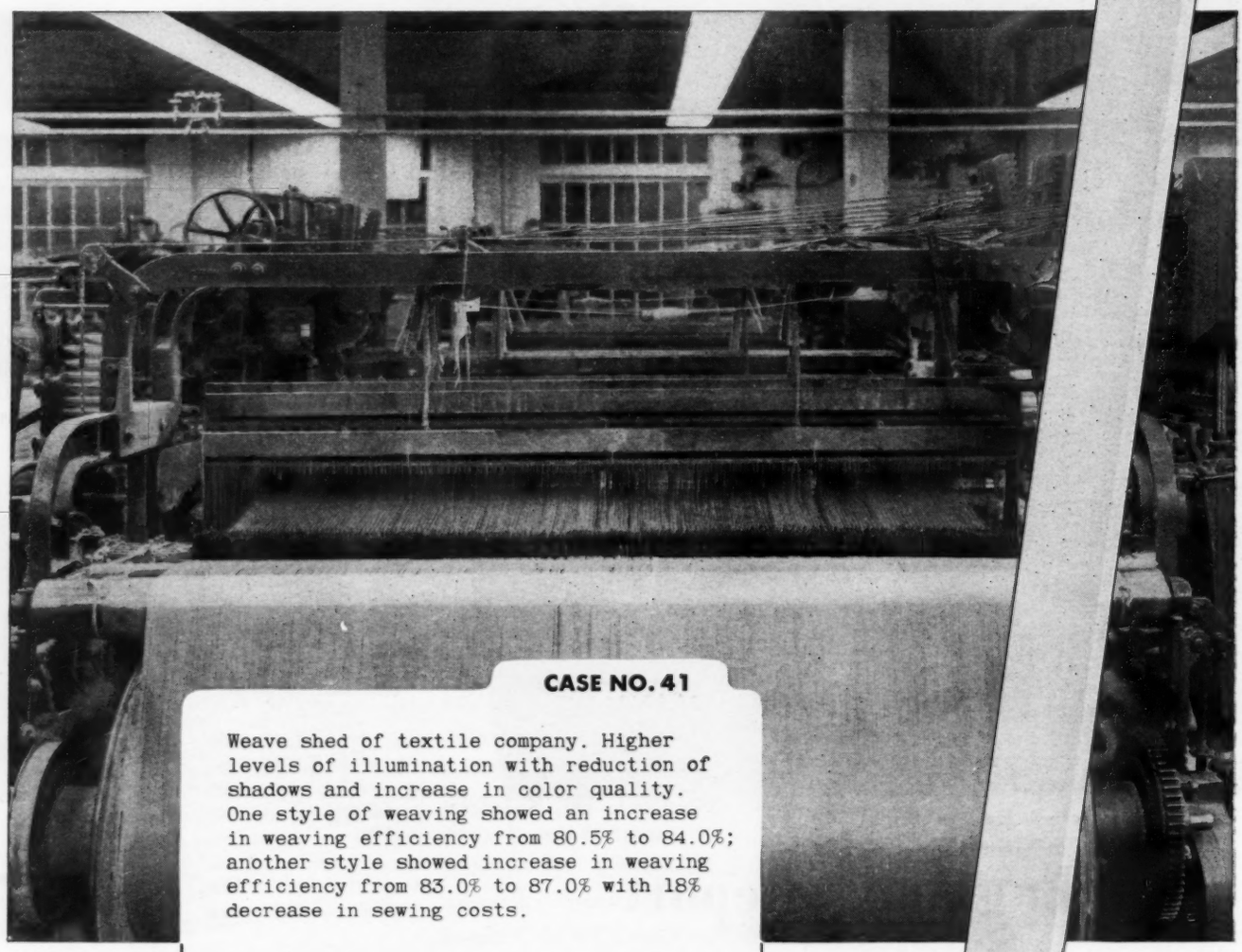
Sprinklered Premises Saved Twice in Fourteen Days.

★

(Also other case histories and detailed facts that are highly pertinent to building protection in wartime.)

EFFICIENCY UP... SEWING COSTS DOWN

with G-E Fluorescent Lighting!



CASE NO. 41

Weave shed of textile company. Higher levels of illumination with reduction of shadows and increase in color quality. One style of weaving showed an increase in weaving efficiency from 80.5% to 84.0%; another style showed increase in weaving efficiency from 83.0% to 87.0% with 18% decrease in sewing costs.

THE actual case described above is only one among scores of similar cases studied by General Electric to show specifically what advantages better lighting . . . in this case, G-E Fluorescent Lighting . . . offers war industries.

If your mills are faced with the problem of getting more and better war production without adding any extra floor space, machinery, or workmen, cool indoor daylight with G-E MAZDA F (fluorescent) lamps in certified fluorescent lighting fixtures may be the answer.

Or, if you must make your present lighting equipment do, here are some things that will improve its effectiveness:

1 Soap and water . . . on a *regular* cleaning schedule.

2 Right size bulbs in present fixtures.

3 Reallocation of present lighting to fit new demands.

4 Supplementary lighting for most critical seeing operations, such as inspections.

5 Light-colored walls to reduce light absorption; light-colored finishes on machinery to increase visibility.

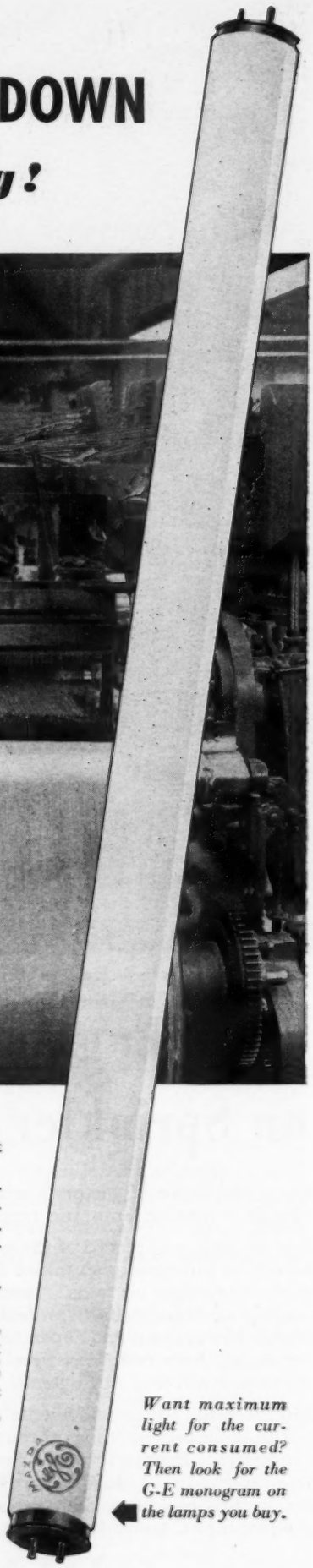
6 Frequent light meter checks on maintenance.

Only if these other methods are inadequate, should new incandescent or fluorescent installations be made. See your G-E lamp supplier or write General Electric Company, Dept. 166-T-5, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS

GENERAL ELECTRIC

Made to stay brighter longer



Want maximum light for the current consumed? Then look for the G-E monogram on the lamps you buy.

Give your Fabrics this real Service Finish

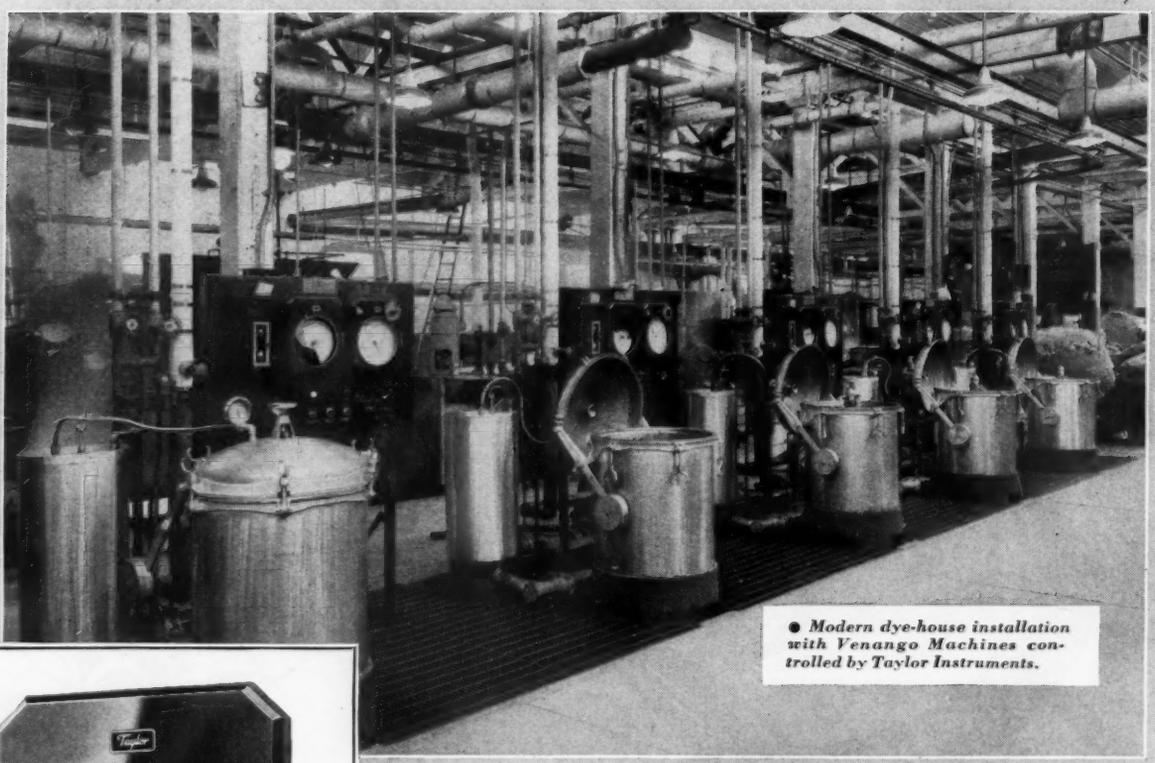
FEN Water Repellent is a real service finish. Now being used on uniform cloth, blankets, rainwear and similar equipment for the armed forces. Fully meets U.S. Army specifications for a water repellent finish. Tests show that fabrics treated with FEN Water Repellent have 15 to 29% greater water repellency than fabrics treated with some other products of the same nature. Savings up to 50% over the cost of using ordinary water repellents are common because better results are obtained with lower concentrations. Write for a sample of FEN today. AMALGAMATED CHEMICAL CORP., Phila., Pa.

Southern Representative:
Robt. A. Bruce,
P. O. Box 35,
Greensboro, N. C.

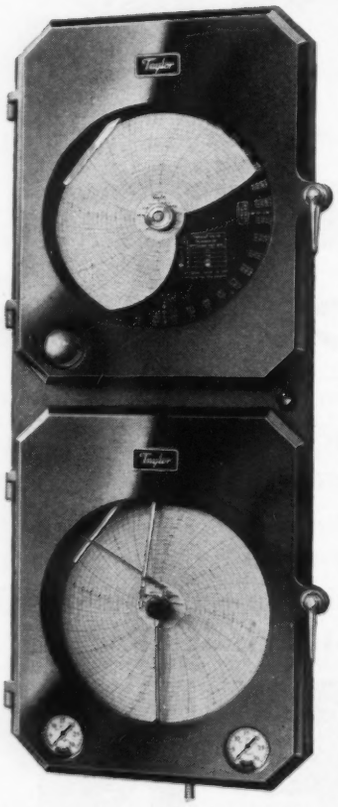
★FEN
WATER REPELLENT

★Registration applied for U. S. Patent Office on both name and illustration.

Taylor Coordinated Control System for combination package and raw stock dye machines



● *Modern dye-house installation with Venango Machines controlled by Taylor Instruments.*



● *The new Taylor Time-Schedule Controller with push-button control illustrated (above) has been incorporated in control systems for piece-dyeing and yarn-dyeing machines, the latter with automatic flow reversal.*

ASSURANCE of *uniform quality* and *peace of mind* is the reason for installing this outstanding Taylor Coordinated Control System.

Temperature is controlled on a definite time basis by means of a Taylor Time-Schedule Controller. Flow of dye liquor is reversed at any desired interval by completely adjustable Taylor Flex-O-Timer Cycle Controller.

Automatic-to-manual feature permits control of liquor flow direction manually, as well as automatically, to interrupt when necessary the automatic flow reversal.

Signal lights show direction of liquor flow at all times. Operator is notified by horn and signal light when samplings are to be made.

RESULTS—Such a control system speeds up the entire dyeing operation. It helps match shades or repeat colors with minimum number of additions. Savings in steam and dyestuffs are substantial.

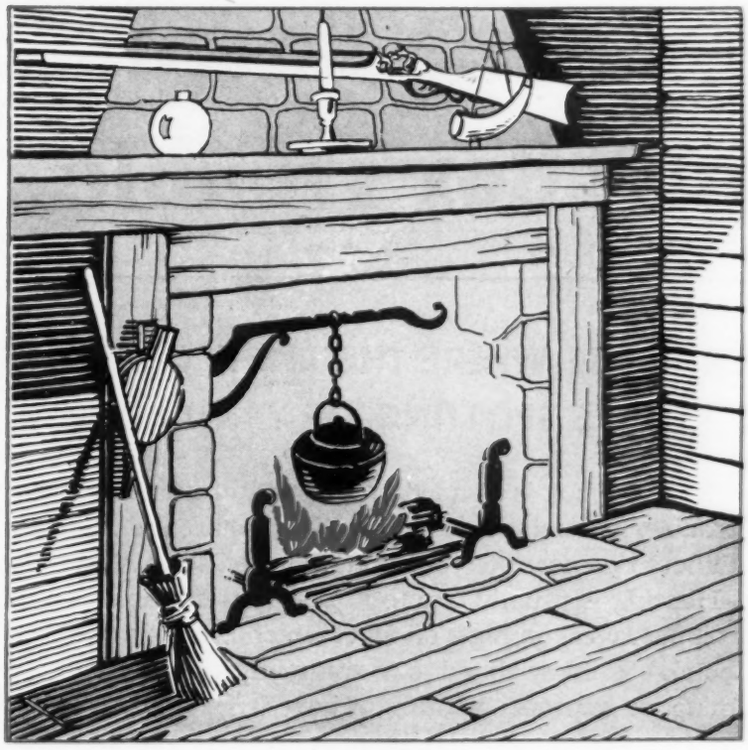
Illustration shows application of system to Venango Dye Machines, but is equally adaptable to other types of package dye machines.

In these days of pegged prices, when mills must absorb any increases in manufacturing costs and labor, it is even more essential that you promote efficiency in processing. Call in a Taylor Engineer to get full information on this dyehouse control. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

Taylor

Indicating | Recording • Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS



Lest we forget...

WITH the machinery of war so much in the headlines, many of us may minimize the importance of our individual contribution to the success of America's War Program. We must not forget that the American spirit has its roots in the home, in our every day lives. Crude Colonial cabins first sheltered the flame that blazed into a free America. Its battles were fought and won by poorly-clad, often ill-fed men whose chief weapons were faith and the muzzle-loading flintlock that rested over every fireplace. Union now with that spirit of America's infancy, will forge the will and might of a great Nation into a certain instrument of Total Victory.

★ ★ ★ ★ ★

INDUSTRIAL SALES DIVISION

A. E. STALEY MANUFACTURING CO.

DECATUR ILLINOIS

Let's Clamp Down on Comb Box Trouble

ANOTHER PLACE WHERE THE RIGHT OIL HELPS REDUCE SPOTTING OF YARN:

Problem: The comb box is frequently a source of lubrication trouble. Excessive heating and leakage are the chief difficulties encountered, resulting in "oil throw" and staining of yarn. Heating is usually due to use of an unsuitable lubricant, clogged oil passages, or high oil level which causes excessive churning. Leakage is invariably due to wear, improper setting, excessive oil foaming, or improper venting of boxes.

Answer: Use an oil specially designed for this type of problem, and be sure the oil is kept at the right level.

Gargoyle Vactra Oil is exceptionally well suited to use in comb boxes. Its high film strength and persistence of film help minimize wear and "oil throw."

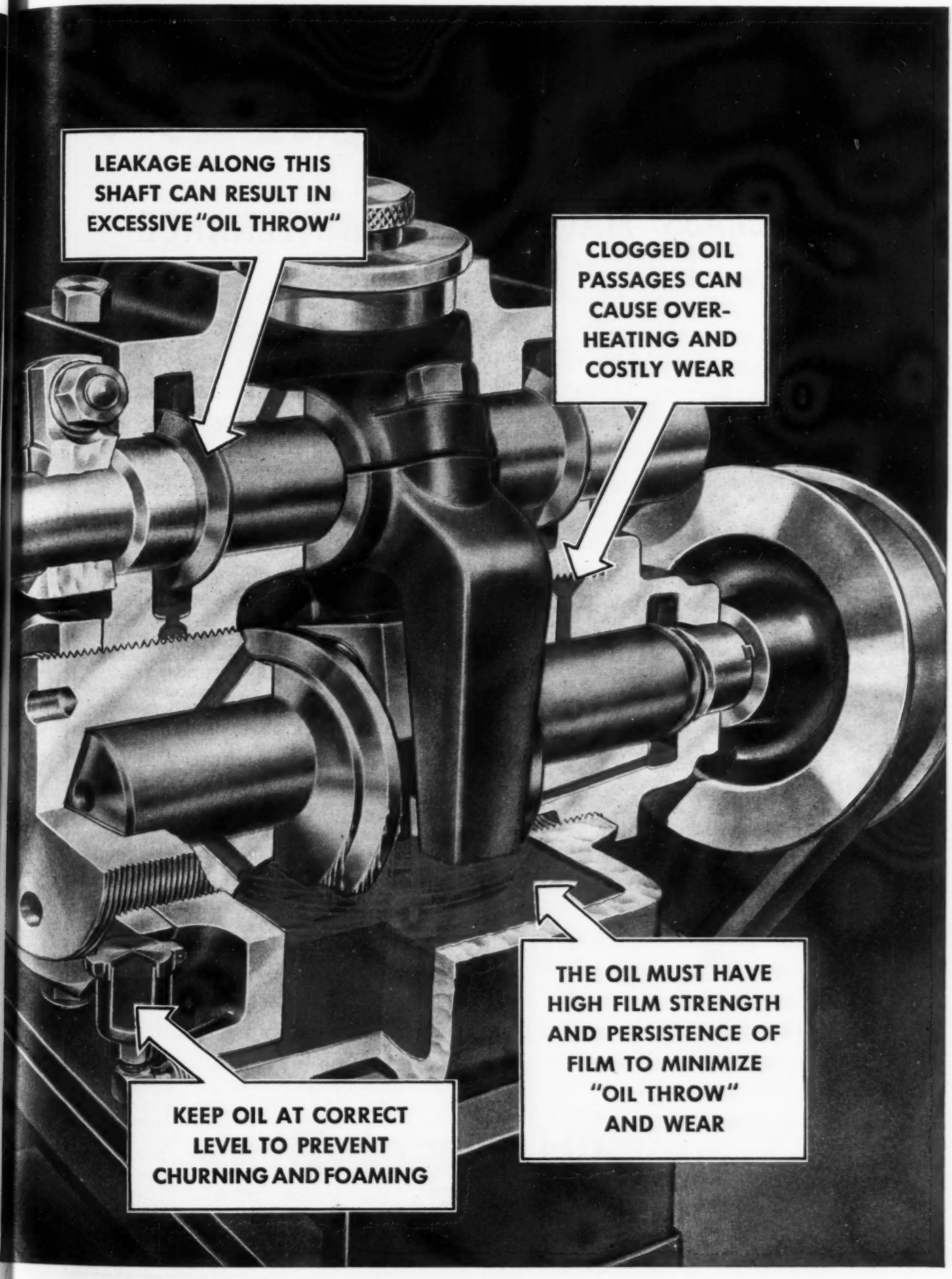
And the Socony-Vacuum man who visits your mill is experienced in helping to solve comb box and other textile lubrication problems. He will be glad to give your men the benefit of his experience in helping them adjust comb box oil level at just the right point.

TO HELP MAINTAIN WARTIME PRODUCTION, CALL IN

SOCONY-VACUUM for "Correct Lubrication"

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC. — Standard Oil of N. Y. Div. — White Star Div. Lubrite Div. — Chicago Div. — White Eagle Div. — Wadhams Div. — Southeastern Div. (Baltimore) — Magnolia Petroleum Company — General Petroleum Corporation of Calif.


LEAKAGE ALONG THIS SHAFT CAN RESULT IN EXCESSIVE "OIL THROW"
CLOGGED OIL PASSAGES CAN CAUSE OVER-HEATING AND COSTLY WEAR
THE OIL MUST HAVE HIGH FILM STRENGTH AND PERSISTENCE OF FILM TO MINIMIZE "OIL THROW" AND WEAR
KEEP OIL AT CORRECT LEVEL TO PREVENT CHURNING AND FOAMING

TOP WARTIME PRODUCTION REQUIRES FIRST CLASS MACHINERY MAINTENANCE

WITH cotton mills running 24 hours a day, six or seven days a week, there is very little opportunity to clean machinery and give it the proper attention, and consequently there will be greater need for overhauling and replacing worn parts. Picking and opening machinery, particularly, requires frequent and careful cleaning on account of the dusty nature of the stock that it handles, and mills which are running around-the-clock will need more picker maintenance than ever before.

While very little new machinery will be available until after the war, old, worn picking machinery can be made to perform as good as new with proper rebuilding. We have specialized in this work for years and are particularly well fitted to rebuild old picking and opening machinery.

We keep on hand for immediate delivery a large stock of repair parts for pickers. A telegram or telephone message, in an emergency, will generally have the needed picker part at the mill within 24 hours from the time you call or wire us.

At this time we suggest that you check your stock room and see that a reasonable quantity of picker repair parts are in stock, since a picker failure can often shut down more other machinery than the failure of almost any other equipment.

We can not only take care of your needs for supplies, but can often rearrange existing equipment to produce better work.

AldricH MachinE WorkS

Greenwood, South Carolina

TIME *Marches On*

In 1921, NORMA-HOFFMANN introduced the Cup Mounting—the forerunner of all self-protected ball bearings. From this, through progressive stages (as shown above) has evolved the NORMA-HOFFMANN "CARTRIDGE" BALL BEARING—an ultra-modern type embodying 30 years of PRECISION BEARING manufacture and offering to industry the following distinctive advantages:

SIMPLER AND MORE ECONOMICAL MACHINE DESIGN, due to elimination of many costly mounting parts and machining operations, otherwise required; EASIER AND FASTER MACHINE ASSEMBLY AND DISASSEMBLY, since the "CARTRIDGE" BEARING is an integrally sealed unit needing no complementary mounting parts; 100% GREATER GREASE CAPACITY, due to double-row width creating a greatly enlarged grease reservoir; COMPLETE AND LASTING EXCLUSION OF DIRT AND FOREIGN MATTER by the use of tightly fitting, wearless, all-metal seals; SEALED FOR ANY POSITION, since the seals retain the lubricant regardless of shaft angle; EASY REGREASING AND INSPECTION WITHOUT DISMOUNTING, by means of refilling plug and removable seals.

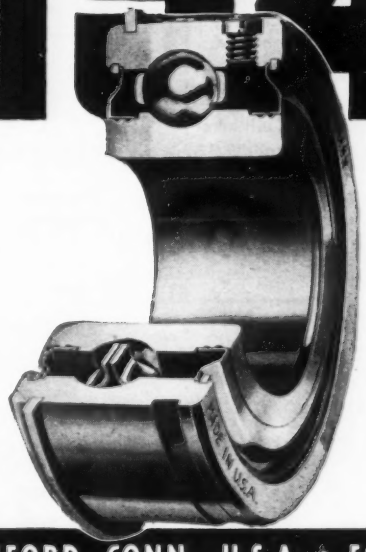
Write for the Catalog. Submit your bearing problems for study and recommendation, without obligation. NORMA-HOFFMANN sales and service engineers, and distributors in principal cities stocking "CARTRIDGE" BEARINGS, are at your service.

"NORMA-HOFFMANN"

CARTRIDGE

BALL BEARING

PRECISION BALL, ROLLER and THRUST BEARINGS



NORMA-HOFFMANN BEARINGS CORP'N., STAMFORD, CONN., U.S.A. • FOUNDED 1911

IT'S EASY TO REGRIND THESE LUNKENHEIMER VALVES

with a few minutes effort they can be made as good as new

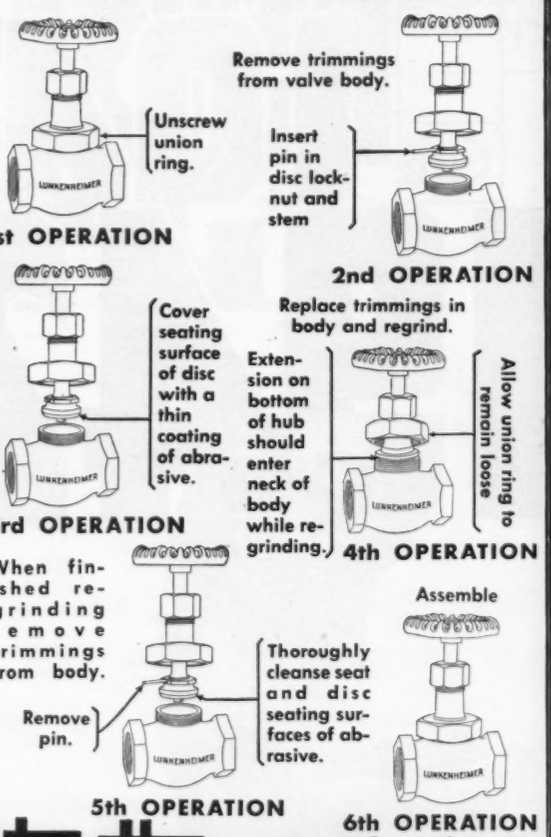
Valve regrinding is really a simple operation—it can be done so easily and quickly without taking the valve from the line.

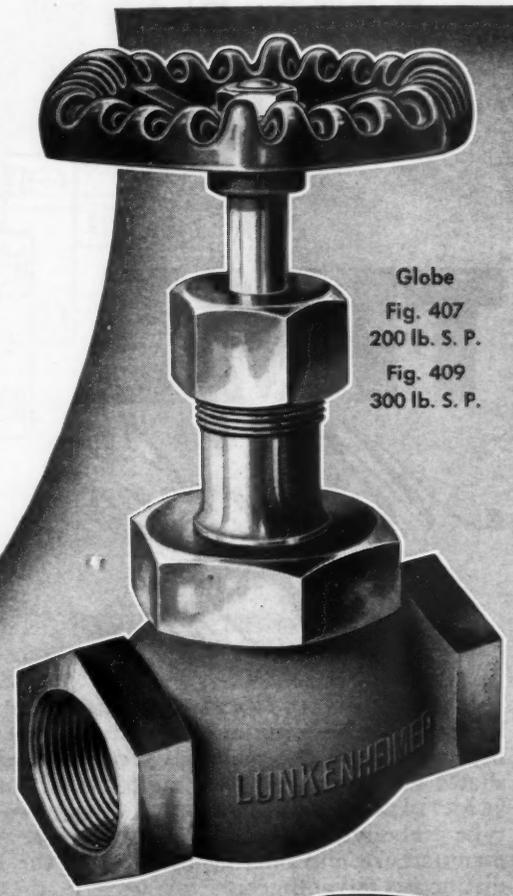
And in this critical period when savings in maintenance time mean so much toward total production—even the time saved in the regrinding operation over replacement is of vital importance.

All parts of Lunkenheimer Regrinding Valves are renewable. Having a few parts available in stock for an emergency can also save much valuable time.

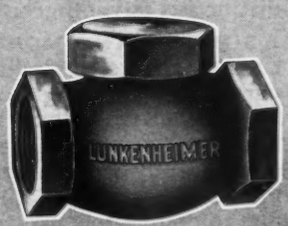
ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO, U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT 318-322 HUDSON ST., NEW YORK

INSTRUCTIONS FOR REGRINDING

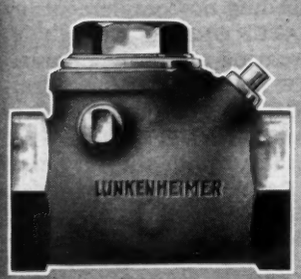

Unscrew union ring.
1st OPERATION
Remove trimmings from valve body.
Insert pin in disc lock-nut and stem
2nd OPERATION
Cover seating surface of disc with a thin coating of abra-sive.
3rd OPERATION
Replace trimmings in body and regrind.
Exten-sion on bottom of hub should enter neck of body while re-grinding.
Allow union ring to remain loose
4th OPERATION
When fin-ished re-grinding re-move trimmings from body.
Remove pin.
Thoroughly cleanse seat and disc seating sur-faces of ab-rasive.
5th OPERATION
Assemble
6th OPERATION



Globe
Fig. 407
200 lb. S. P.
Fig. 409
300 lb. S. P.



Lift Check
Fig. 414—200 lb. S. P.
Fig. 413—300 lb. S. P.

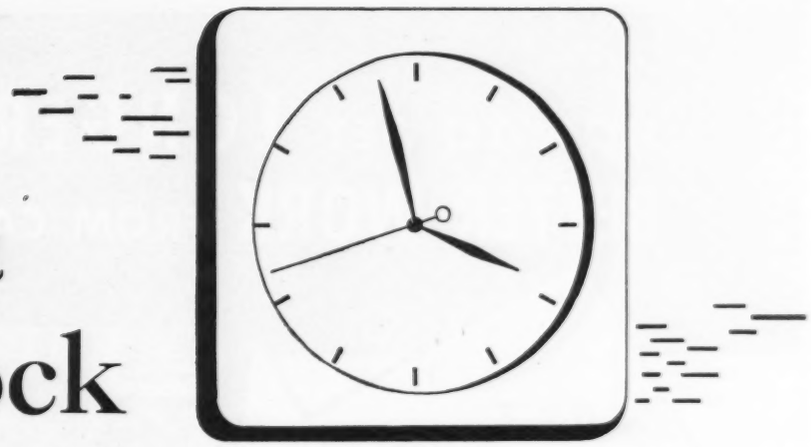


Swing Check
Fig. 554—200 lb. S. P.
Fig. 624—300 lb. S. P.

Since virtually all materials used in the manufacture of valves are on the list of critical materials, valve users are urged to furnish the highest possible preference ratings on their orders. This will be of mutual helpfulness.

LUNKENHEIMER VALVES

This is a Clock



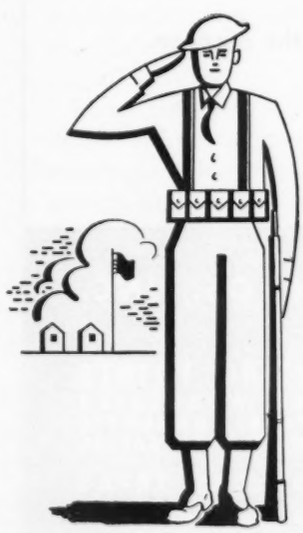
That relentlessly ticks off the seconds—minutes—hours —that mean *speed, speed, speed* in America's war effort.

This is a drop of Yarmor* 302-W Pine Oil

That is making each second count in key textile processing operations. It is cutting fulling time as much as 30%, besides doing an efficient job in kier boiling and as a dye assistant.

This is a Hercules Chemist

Who is backing up America's war effort by developing new, improved chemical materials—who, besides developing Yarmor 302-W, has just succeeded in producing synthetic pine oil, to help produce many more yards of cloth, many more minutes faster than ever before.



And this is the Soldier

Representing our rapidly growing armed forces—who is a living tribute to the textile industry in making him the best and most comfortably dressed soldier in the world—all in record time.

NAVAL STORES DEPARTMENT

HERCULES POWDER COMPANY

Incorporated

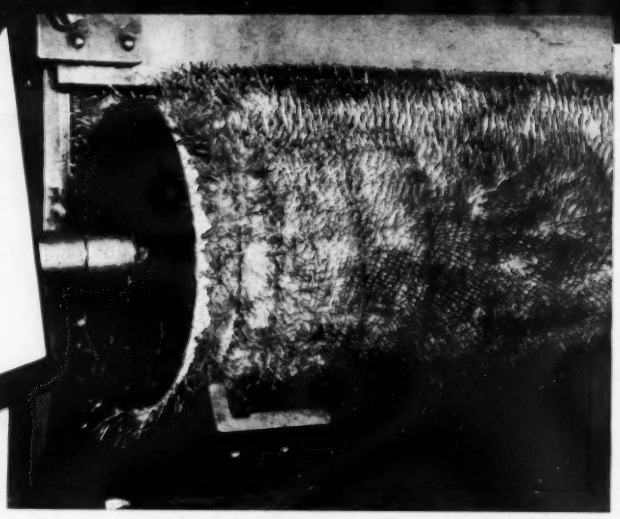
903 MARKET STREET • WILMINGTON • DELAWARE

Branch Offices: Chicago • New York • St. Louis • Salt Lake City • San Francisco

*Reg. U.S. Pat. Off., by Hercules Powder Company

HOW TO GET LONGER LIFE *and* BETTER WORK FROM CARD CLOTHING

DON'T USE A STRIPPING BRUSH LIKE THIS!



IT IS a fallacy to assume that the vacuum stripper has made the stripping brush on a card unnecessary. The latter still plays an important part in the promotion of good carding by freeing the cylinder clothing of impacted waste, hulls and other foreign matter which the former fails to touch, and good carding practice demands that a brush be used regularly once a week.

The cost of a stripping brush is negligible. Therefore there is little excuse for using one in poor condition. This is all too frequently done and is often the cause of selvages loaded with neps. Shiners (wire knocked forward) and loose fillets are the results from using a brush in the above condition.

It pays to use a good stripping brush and one with the correct wire for the purpose. Ashworth can supply you with both.

ASHWORTH

PIONEERS IN CARD CLOTHING . . . *ASHWORTH BROS., INC.*
Woolen Div. AMERICAN CARD CLOTHING CO.

3 FACTORIES — FALL RIVER, WORCESTER, PHILADELPHIA

6 REPAIR SHOPS — FALL RIVER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

7 DISTRIBUTING POINTS — FALL RIVER, WORCESTER, PHILADELPHIA, CHARLOTTE, GREENVILLE, ATLANTA, DALLAS

SOUTHWESTERN REPRESENTATIVE: • TEXTILE SUPPLY CO., DALLAS, TEXAS

PRODUCTS AND SERVICES: Card Clothing for Cotton, Wool, Worsted, Silk and Asbestos Cards and for all Types of Napping Machinery • Brusher Clothing and Card Clothing for Special Purposes • Lickerin Wire and Garnet Wire • Sole Distributors for Platt's Metallic Wire • Lickerins and Top Flats Reclothed

MUST WE SACRIFICE QUALITY IN OUR FABRIC DYEING?

Current comment in the press implies that the textile finishing industry will have to put up with substitute dyes—will have to be satisfied with inferior materials for conventional dyeing methods—that fabric dyeing can not be expected to maintain the present high standards of the industry—that fabrics will not have the same sun fastness and washability. Some even say we will not have gray goods.

We Do Not Think So!

The supply of cloth may be allotted, but whatever the available yardage, you need not sacrifice quality in the finishing. The answer to shortages of chemicals and plant equipment for conventional dyeing is pigment-dyeing with Aridye* pigmented emulsions. Using still relatively abundant materials, it is an entirely new method of applying color on textiles.

Restrictions will increase probably—but many fast pigments will not be greatly affected. Textile finishers can obtain plain shades by using this new method, and maintain the high standards of the industry. You can continue to get the same or better sun fastness and washability in shirtings, pyjamas, sportswear and work clothes; in fabrics of many kinds, including cottons, rayons, acetates and mixtures. Comparative tests show that the industry's high standards of fastness are more than met by this method of pigment-dyeing (Aridye Corporation's U. S. Pat. No. 2,248,696). This releases for military purposes sorely needed chemicals and production capacity.

Aridye colors for pigment-dyeing are emulsions. The pigments are dispersed in a solution of synthetic resins into which water is emulsified. This emulsion remains stable until dried; consequently there is no exhaustion of the bath, as all components are taken up by the fabric together in the same proportions.

Tests, covering Mildew Effectiveness, Resistance to Abrasion, Chlorine Retention, Air Porosity and Presence of Primary Irritating Substance, have been made by the United States Testing Company, Inc. Full copies of these reports will be sent on request.

Investigate these and other advantages of pigment-dyeing with Aridye pigmented emulsions. Send for additional information, including our standard form of license, under which many dyers are operating at present. Write to Aridye Corporation, a Subsidiary of Interchemical Corp., Fair Lawn, N. J.

*Reg. U. S. Pat. Off.

Aridye

TEXTILE COLORING MATERIALS

ROCK HILL, SOUTH CAROLINA • FAIR LAWN, NEW JERSEY • PROVIDENCE, RHODE ISLAND

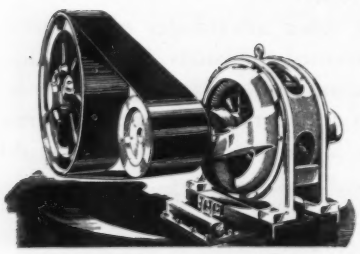
Leather Belting...

helping you outfit America's Armies

In your tremendous job of helping to outfit America's armed forces . . . you need the most *dependable* power transmission. There are numerous reasons why Leather Belting continues, as it has for years, to be the leading Belting for textile mills. It is particularly adapted for use on pivoted Motor Bases. It compensates for load and power variations, guards product quality.

Modern Leather Belting has the greatest permanent pulling power of any known belting material. Quality Leather Belting lasts longer, delivers more power at less cost, has a further salvage value in your plant after its natural long life as a Belt.

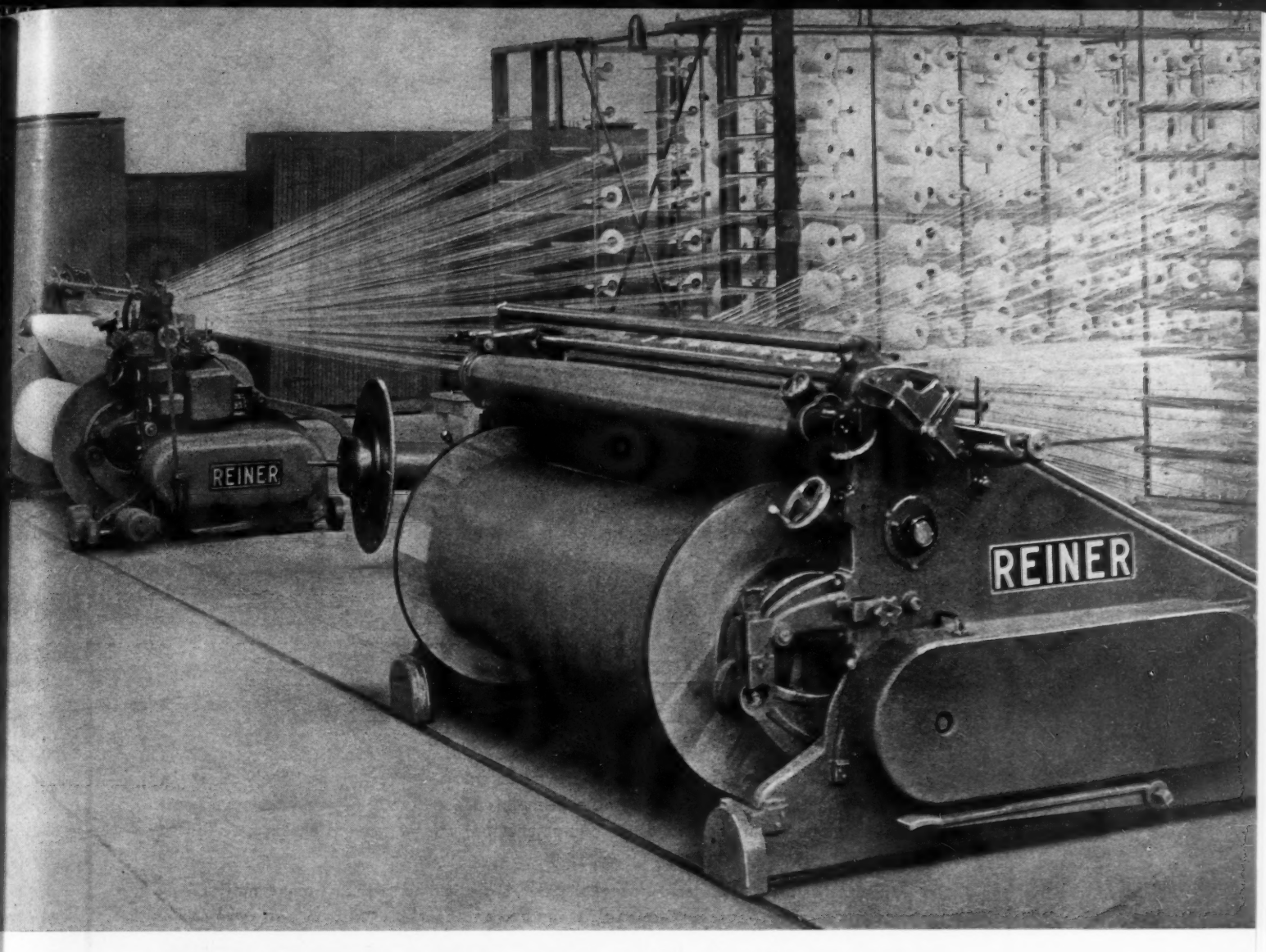
Consult your supplier, or any Leather Belting salesman. Of all materials for modern power transmission, quality Leather Belting is the most readily available.



The "Production Drive"

AMERICAN LEATHER BELTING ASSOCIATION
53 Park Row, New York, N. Y.

Rely on Leather Belting



Approved by Experts

THE NEW REINER HIGH-SPEED WARPER AND CREEL

for beaming Rayon, Spun Rayon, Wool, Worsted and Cotton

Due to the direct beam drive, which is on an entirely new principle, the Reiner High-Speed Warper is the most advanced in the market.

The warping speed control is automatically adjusted without clutch or mechanical drives—with a stepless speed range of from 100 to 1000 yards per minute. It provides a slow, sensitive starting speed, irrespective of the rate of operating speed desired.

These and many other new features of the Reiner High-Speed Warper and Creel guarantee to rayon, wool, worsted and cotton manufacturers the most efficient and economical equipment that the market affords for turning out the highest quality of production. Investigate these new features at once.

Write us at once for full information regarding this new equipment and all other REINER American-made Thread Tensions, single and magazine high speed Creels and allied equipment. Kindly request —without obligation—agent's visit and further technical details.

ROBERT REINER, INC.

WEEHAWKEN (10 minutes from Pennsylvania Station) NEW JERSEY

Pat'd. and Pats. Pending

Any way you look at it___

...you can save maintenance time by using UNBRAKO

SELF-LOCKING HOLLOW SET SCREWS

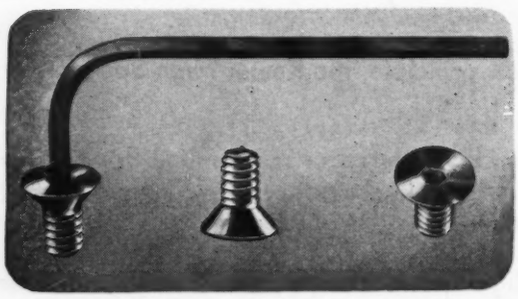
with Knurled Points

By installing "Unbrako" Self-Lockers wherever ordinary set screws are likely to shake loose, many mills are saving considerable in maintenance time and are insuring against possible damage to looms and other equipment that might result if the screws fail to hold.

Tightened up as usual, Knurled "Unbrako" Screws dig in and stay locked no matter how severe the vibration. Yet, they are easy to remove and can be used over and over again.

For details and sizes, write for the "Unbrako" Catalog or ask your local distributor.

The KNURLING of Socket Screws originated with "UNBRAKO" years ago.



"UNBRAKO" WELT BAR SCREWS

Uniformly strong and accurate, "UNBRAKO" Welt Bar Screws insure extra satisfaction in many a mill. Ask for samples of these too.

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 582

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

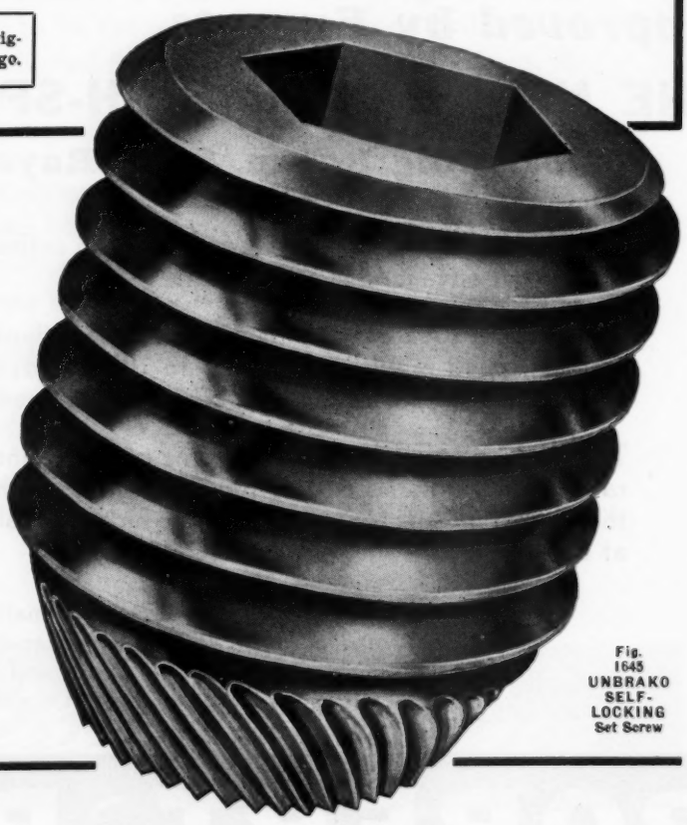
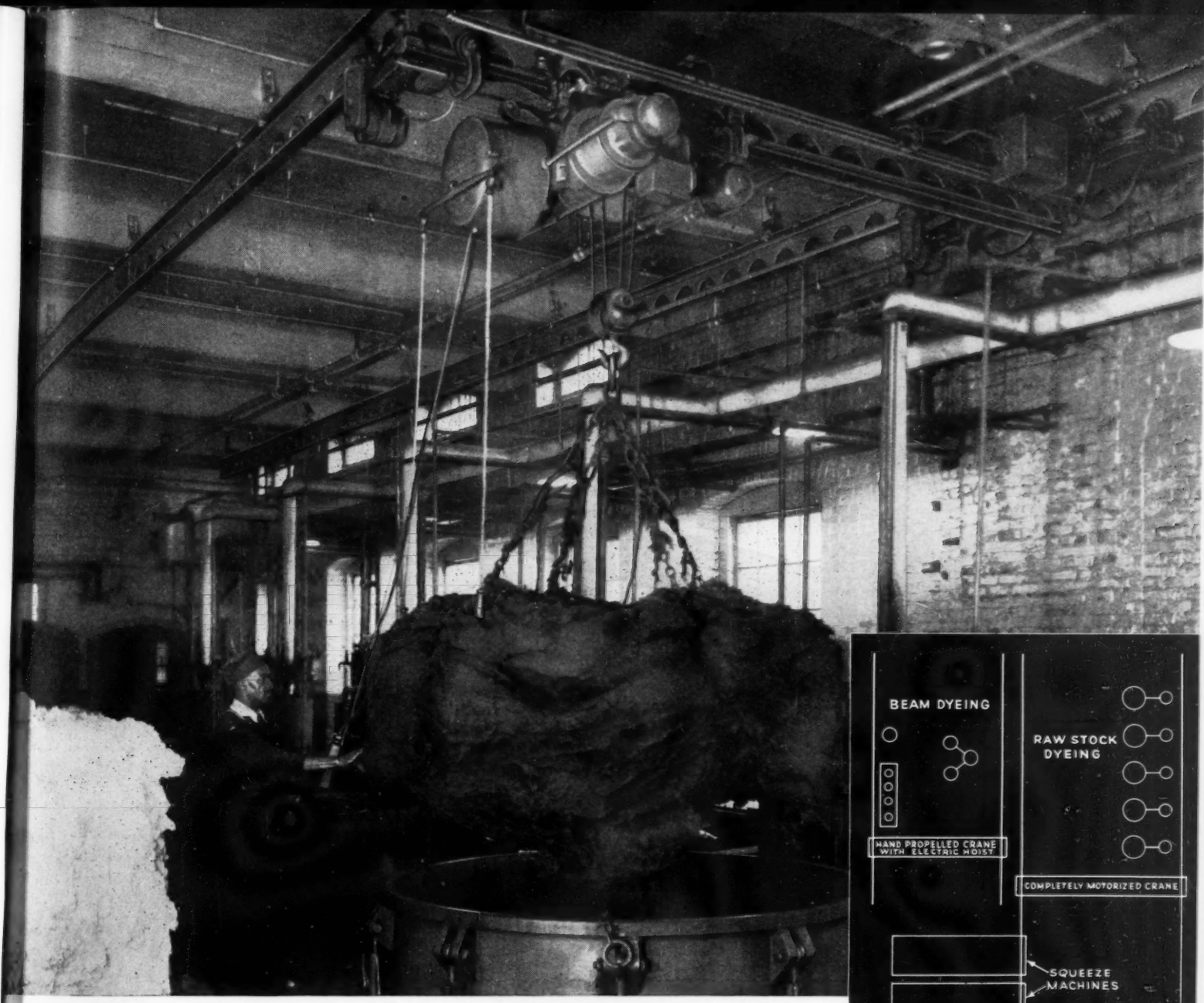
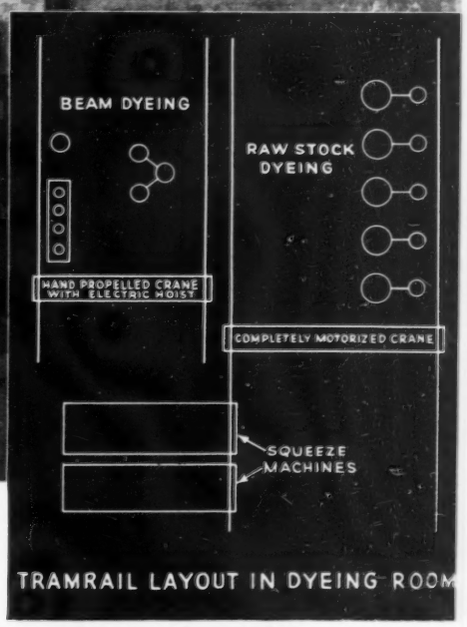


Fig. 1645 UNBRAKO SELF-LOCKING Set Screw





TRAMRAIL LAYOUT IN DYEING ROOM

Speeds Denim Raw Stock Dyeing and Handling

In 1939, a three-ton completely motorized Cleveland Tramrail Crane was installed in the Dye Room of a leading North Carolina denim mill. This serves five 1500-pound Chattanooga dyeing machines. It speeds the handling of heavy kier covers and bulky wet cotton charges.

The hard manual work formerly required has been eliminated. Time lost in loading and unloading the dyeing machines is greatly reduced and consequently they can be in dyeing service a greater part of the time.

Because of satisfaction with the first crane, another crane was purchased in 1941 and installed in an adjacent bay to serve a two-kier Gaston County dyeing machine for beam dyeing. This is a hand-propelled crane with electric hoist, that greatly facilitates the handling of beams in and out of the dyeing machines, extractor and dryer.

GET THIS BOOK!

BOOKLET No. 2008 . . Packed with valuable information. Profusely illustrated. Write for free copy on your company letterhead.

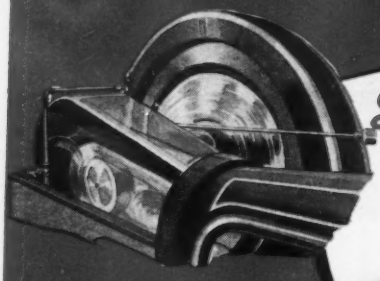
CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
1175 EAST 283RD ST. WICKLIFFE, OHIO.

MANUFACTURERS OF • CLEVELAND CRANES • CLEVELAND TRAMRAIL • STEELWELD BENDING PRESSES

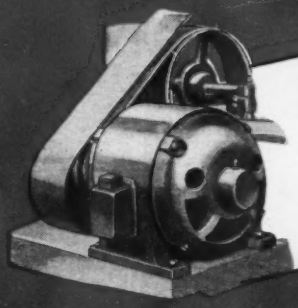
CLEVELAND TRAMRAIL

OVERHEAD MATERIALS HANDLING EQUIPMENT

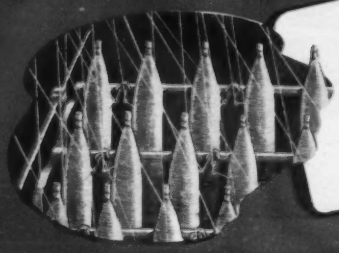
From Power



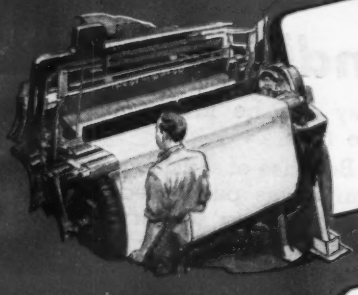
Steam Engines "We saved two out of three filter changes" with Tide Water Steam Cylinder Oil. "32,000 hours continuous turbine operation and the oil still is in excellent condition." Tide Water Turbine Oils have improved performance on prime movers throughout industry.



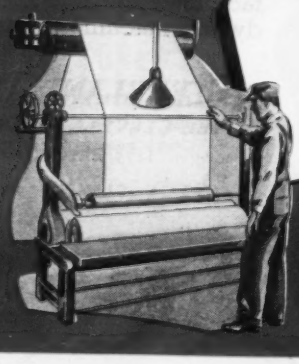
Electric Motors "9 years without a bearing failure." Tide Water Green Cast Greases hold their body; won't break down or thin out quickly. The reason – more cylinder oil and a minimum of soap.



Spindles "300,000 spindles operating for 13 years without a single lost tube. Tycol's Spindle Oil most satisfactory lubricant we have ever found." There are six Tycol Spindle Oils engineered for ball, roller or plain bearing spindles.



Looms "400 looms in our mill have been running trouble-free for over five years." Tide Water Greases retain their body – they do not splatter onto the warp.



Tentering Frames "Tide Water Non-Fluid Textile Oils solved the difficult problem of lubrication in a warm place. When we want peak production, they help – not hamper us."

Plant to Finishing

Tycol *Engineered* Textile Lubricants assure *efficient machine performance, maximum production, minimum wear.*

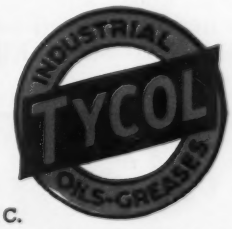
TODAY'S all-out schedules in the textile industry are throwing a heavy load on machinery. With new equipment scarce and present facilities burdened, there is a pressing need for lubrication that keeps machines working efficiently.

Tide Water's complete line of oils and greases will efficiently meet the lubricating need of the textile industry—from keeping power equipment running smoothly to improving spindle performance. Many years of dependable service in textile manufacture—wool, cotton, silk, and rayon—have proved the economy and reliability of Tycol lubricants. In the present emergency mill owners and operators can depend on Tide Water lubricants to sustain machine operation with maximum economy and untroubled performance.

Whatever your lubrication problem, there is a Tide Water textile lubricant engineered to meet your particular need. Our helpful bulletin "Principles of Textile Mill Lubrication" will be sent to you on request. Tide Water's experienced textile engineers will be glad to consult with you if desired. Write for full information to Tide Water Associated Oil Company, 17 Battery Place, New York, N. Y.

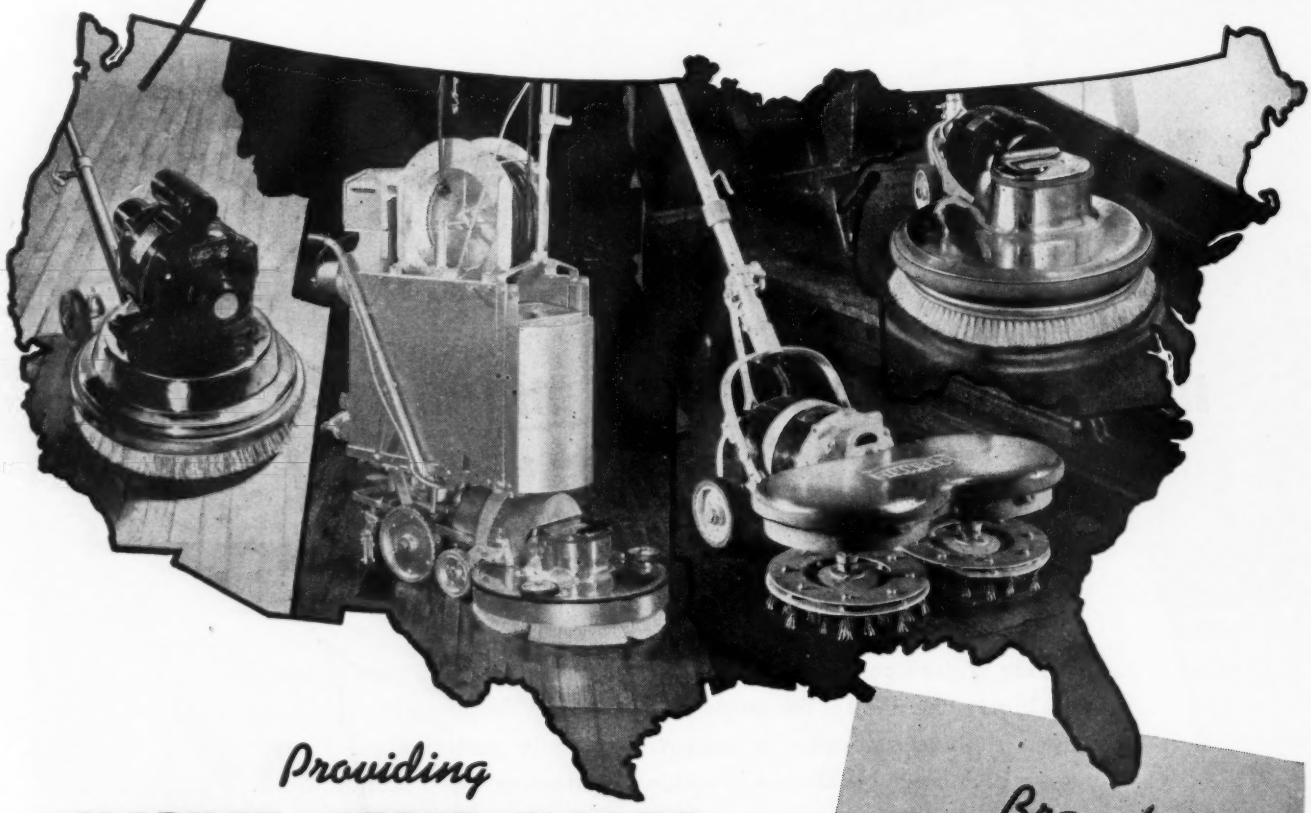
DRUMS! War needs make it extremely important that all empty drums be returned immediately.

TIDE WATER
ASSOCIATED OIL COMPANY
EASTERN DIVISION
17 BATTERY PLACE, NEW YORK
Regional Offices: Boston, Philadelphia, Pittsburgh, Charlotte, N. C.
MAKERS OF THE FAMOUS VEEDOL MOTOR OIL



Coast to Coast . . .

Finnell KEEPS 'EM ROLLING



Providing
CLEANER, SAFER FLOORS
for Workers

Stepped-up production requires stepped-up floor-cleaning schedules to remove the faster-accumulating dirt, oil, et-cetera. Interrupted service or faulty performance of floor-maintenance equipment, resulting in improperly cared for and hazardous floors, can be costly to workers, management, and the Nation.

No matter where your mill is located in the United States, there's a *Finnell* branch to see that *your* requirements are promptly and correctly serviced. And *Finnell* also offers you the advantage of *a single source of supply* for *all* your floor-maintenance needs,—equipment (49 models and sizes), cleansers, finishes, and accessories.

For consultation, free floor survey, literature, or demonstration, phone nearest *Finnell* branch, or write Finnell System, Inc., 1306 East Street, Elkhart, Indiana.

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IN ALL THESE CITIES:

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FINNELL SYSTEM, INC.

Pioneers and Specialists in FLOOR MAINTENANCE EQUIPMENT

● Built by
JOHNSON & BASSETT, INC.

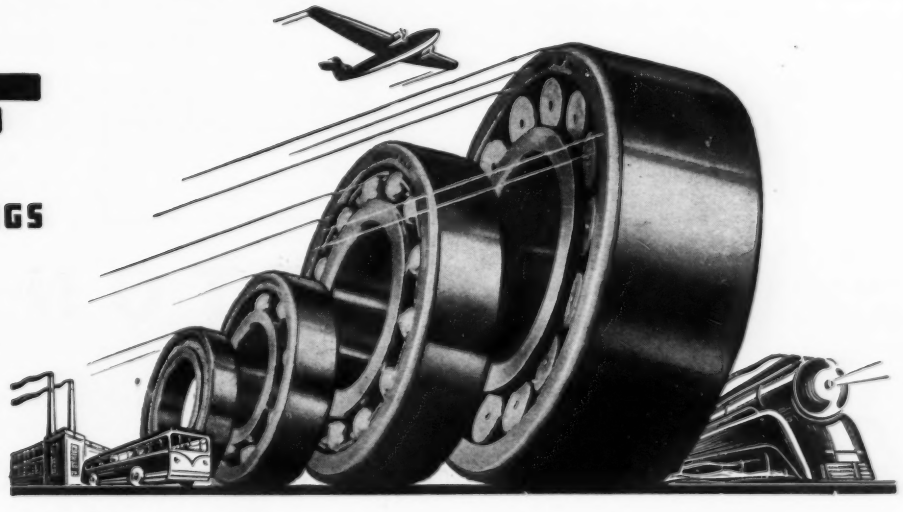
500 SKF Bearings *pep up* PRODUCTION

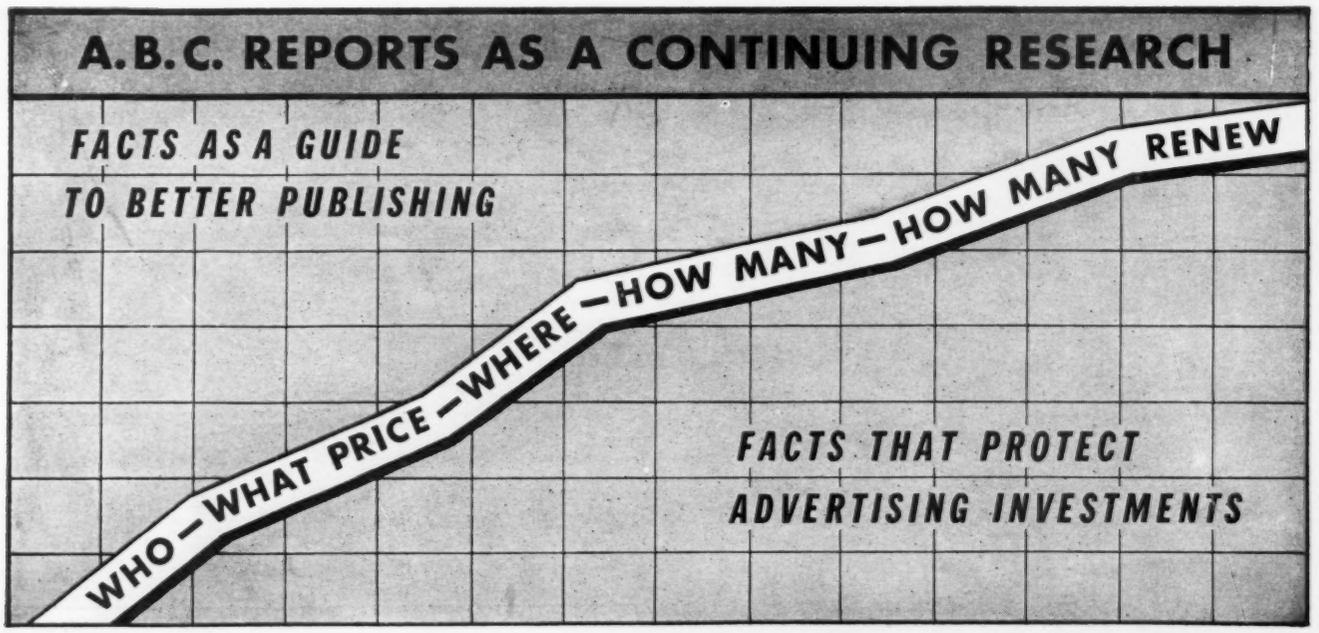
When you realize how important a part that *wool* is playing in the War, it's easy to understand why these Giant Package Mules must operate efficiently. Uniforms, blankets, flags, etc., must be made FAST —and speed under pressure on this machine is guaranteed by more than 500 SKF Ball Bearings. Let radial and thrust loads come as they will, SKF's maintain their initial close tolerances and full load carrying capacity . . . save labor and production delays . . . use very little lubricant. This is the age of Speed in War Production . . . and Speed becomes a *certainty* with SKF Bearings. 5061

SKF INDUSTRIES, INC., PHILA., PA.

SKF

BALL & ROLLER BEARINGS





WHAT? A PERPETUAL SURVEY?

Yes, and it covers every subscriber!

GETTING direct, periodic reactions of subscribers and making editorial use of facts so obtained is one of the important ways to build and maintain specific kinds of readership on a solid foundation.

But—

Who are the readers attracted by this publishing policy? What do they pay for the publication? Where are they located? How many? How many renew?

A. B. C. reports tell all that and more. They are gold mines of information for those advertisers who want to buy space intelligently and wisely.

This verified data also gives us, as publishers, a true picture of reader reaction. For instance, if the number of subscribers in a certain classification has dropped we can find out why and correct the cause. Thus nearly every paragraph in an A. B. C. report is a guide to action and improvement.

Our membership in the Audit Bureau of Circulations does more than provide for advertisers verified facts about our circulation figures and methods. A. B. C. reports represent a continuing research of readership that helps us in our work of publishing a constantly improving business paper. Both results are essential to the best interests of advertisers.

A. B. C. PROTECTS YOUR ADVERTISING

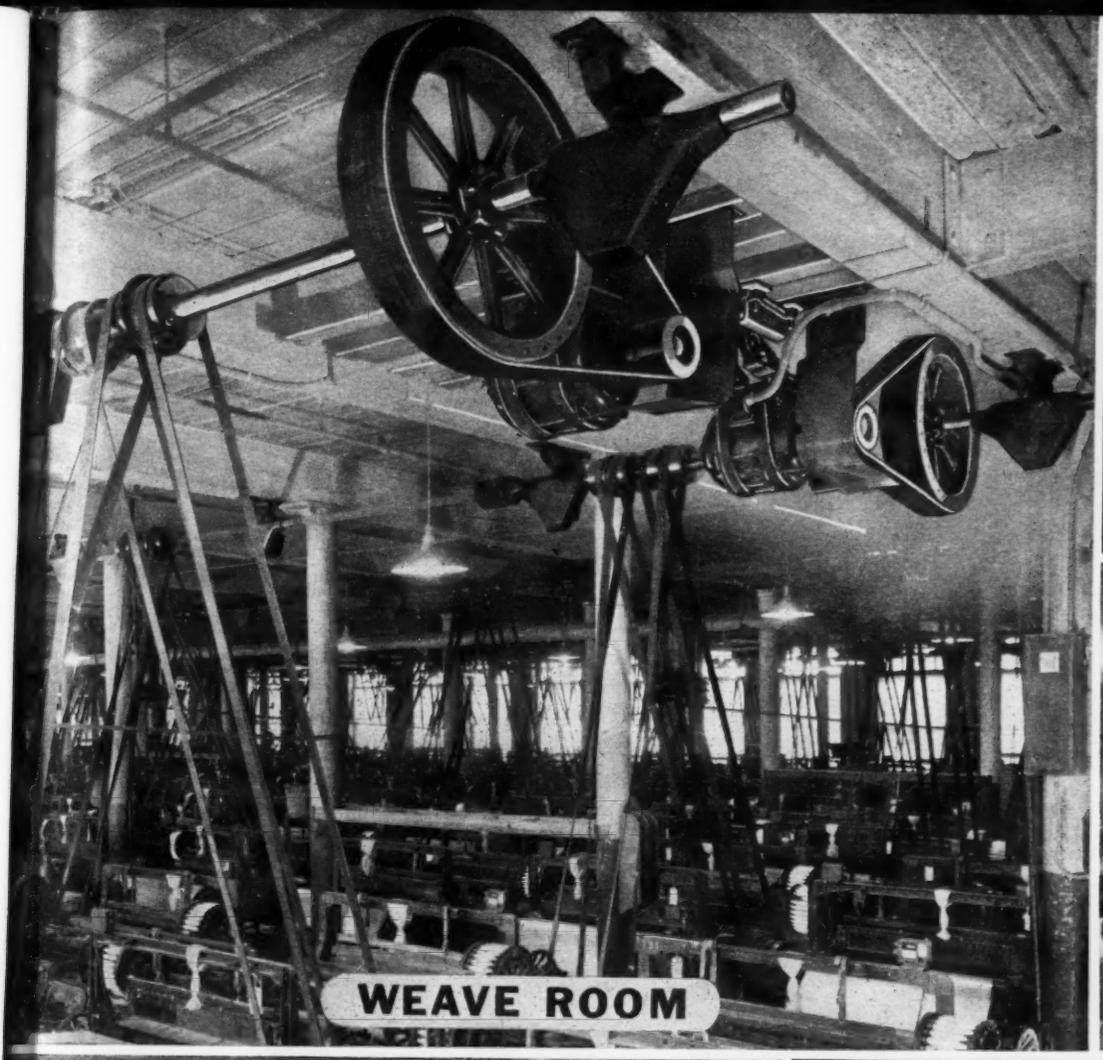
Paid subscriptions, renewals, evidence of reader interest, are among many facts in A. B. C. reports that are definite guides to effective media selection. When you buy space in A. B. C. publications your advertising is safeguarded by audited circulation. Always ask for A. B. C. reports.

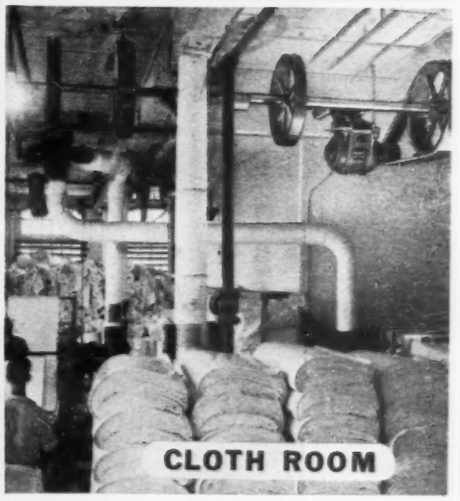
COTTON

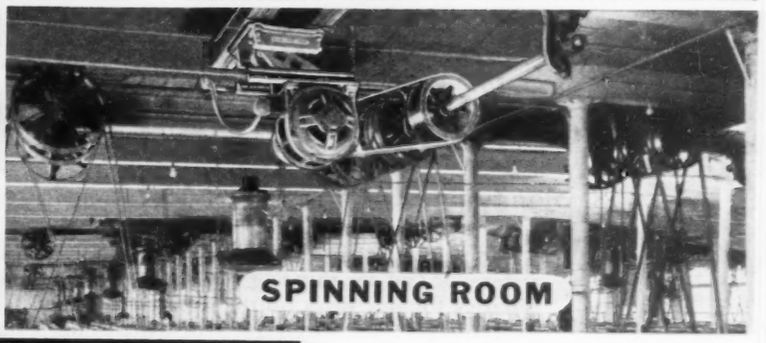
Member of the Audit Bureau of Circulations ABC *Ask for a copy of our latest A.B.C. report*

A. B. C. = AUDIT BUREAU OF CIRCULATIONS = **FACTS** AS A MEASURE OF CIRCULATION VALUES

GOSSETT MILLS
ANDERSON, S. C.
DRIVE THEIR LINESHAFTS WITH
Rockwood Drives







ROCKWOOD PIVOTED MOTOR DRIVE

Three views showing Rockwood Ceiling Type Pivoted Motor Bases at Gossett Mills. With a well made belt these drives have a remarkable freedom from maintenance. They improve the performance of every machine driven from the lineshaft — because of their uniform speed.

AN ENGINEERING IDEAL FOR LINESHAFT DRIVES

Nearly every cotton mill has some lineshafts. If their speeds are not uniform then the speeds of all machines driven from them are likewise affected and their production will vary. So it is important that lineshaft speeds be dependable and uniform.

That is why so many leading cotton mills use these Rockwood Ceiling Type Drives. Everywhere they are hailed as a decisive and worth while improvement. They keep belts tight automatically—regardless of how the belts may stretch under load. *Each drive is its own maintenance man.*

Not only are Rockwood Ceiling Type Drives a boon to millwrights—but they perform the same important service as Rockwood floor bases—*they keep lineshafts at uniform speeds so that driven machines can do more work and better work.*

IF YOUR LINESHAFTS ARE NOT EQUIPPED WITH THESE DEPENDABLE DRIVES it will pay you to investigate. Write to factory or ask your nearest Rockwood dealer. Prompt deliveries are still available to essential plants.

ROCKWOOD MANUFACTURING CO., INDIANAPOLIS, IND.

Next to the Stars and Stripes . . .

AS PROUD A FLAG AS INDUSTRY CAN FLY

Signifying 90 Percent or More Employee Participation in the Pay-Roll Savings Plan

IT doesn't go into the smoke of battle, but wherever you see this flag you know that it spells Victory for our boys on the fighting fronts. To everyone, it means that the firm which flies it has attained 90 percent or more employee participation in the Pay-Roll Savings Plan . . . that their employees are turning a part of their earnings into tanks and planes and guns *regularly,* every pay day, through the systematic purchase of U. S. War Bonds.

You don't need to be engaged in war production activity to fly this flag. Any patriotic firm can qualify and make a vital contribution to Victory by making the Pay-Roll Savings Plan available to its employees, and by securing 90 percent or more employee participation. Then notify your State Defense Savings Staff Administrator that you have reached the goal. He will tell you how you may obtain your flag.

If your firm has already installed the Pay-Roll Savings Plan, now is the time to increase your efforts: (1) To secure wider participation and reach the 90-percent goal; (2) to encourage employees to increase their allotments until 10 percent or more of your gross pay roll is subscribed for Bonds. "Token" allotments will not win this war any more than "token" resistance will keep our enemies from our shores, our homes. If your firm has yet to install the Plan, remember, TIME IS SHORT.

Write or wire for full facts and literature on installing your Pay-Roll Savings Plan now. Address Treasury Department, Section D, 709 12th St., NW., Washington, D. C.

Make Every Pay Day "Bond Day"

U. S. WAR Bonds ★ Stamps

This Space is a Contribution to Victory by COTTON

Our marching men deserve the best ... NOW!

Stout hearted men in our fighting forces deserve the best ... and they deserve to get it now. Every available force must be directed at speeding supplies so vitally needed.

The Singer Engineering Service Department is maintained to assist sewing machine users in attaining the greatest efficiency with either new or old equipment. Men of wide experience in production methods are prepared to survey your plant, make time studies, analyze and synchronize your operations so that the greatest possible efficiency is attained.

For complete information, call or write today.

SINGER SEWING MACHINE CO.

Manufacturing Trade Department **149 Broadway, New York, N. Y.**

Branches in all principal cities

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REMEMBER...FOR VICTORY...KEEP BUYING WAR BONDS AND STAMPS

Dear Pop:

Even an old Rainbow Divisioner like you would pop your eyes at the army we're putting together this time. Let me tell you, they're doing everything to make up just about the best bunch of fighting galoots you ever saw.

And that goes for what they do for us off duty, too! Take this new clubhouse we got just outside of camp. It's got radios, dance floors, nice soft chairs and everything. And, Pop, you can get something to eat that won't cost you a month's pay!

Now, the army isn't running this. The USO is. And most of the other camps got USO clubs too, because you and a lot of other folks dug down and gave the money to the USO last year.

But, Pop, you know what's happened since then. Guys've been streaming into uniform. Last year there was less than 2 million of us. This year there'll be 4 million. And the USO needs a lot more dough to serve that many men—around 32,000,000 bucks I hear.

Now, Pop, I know you upped with what you could last time. But it would sure be swell if you could dig into the old sock again. Maybe you could get some of the other folks in the neighborhood steamed up, too.

It will mean an awful lot to the fellows in camp all over the country. Sort of show 'em the home-folks are backing them up. And, Pop, an old soldier like you knows that's a mighty nice feeling for a fellow to have. See what you can do, huh, Pop?

Bill

GIVE TO THE

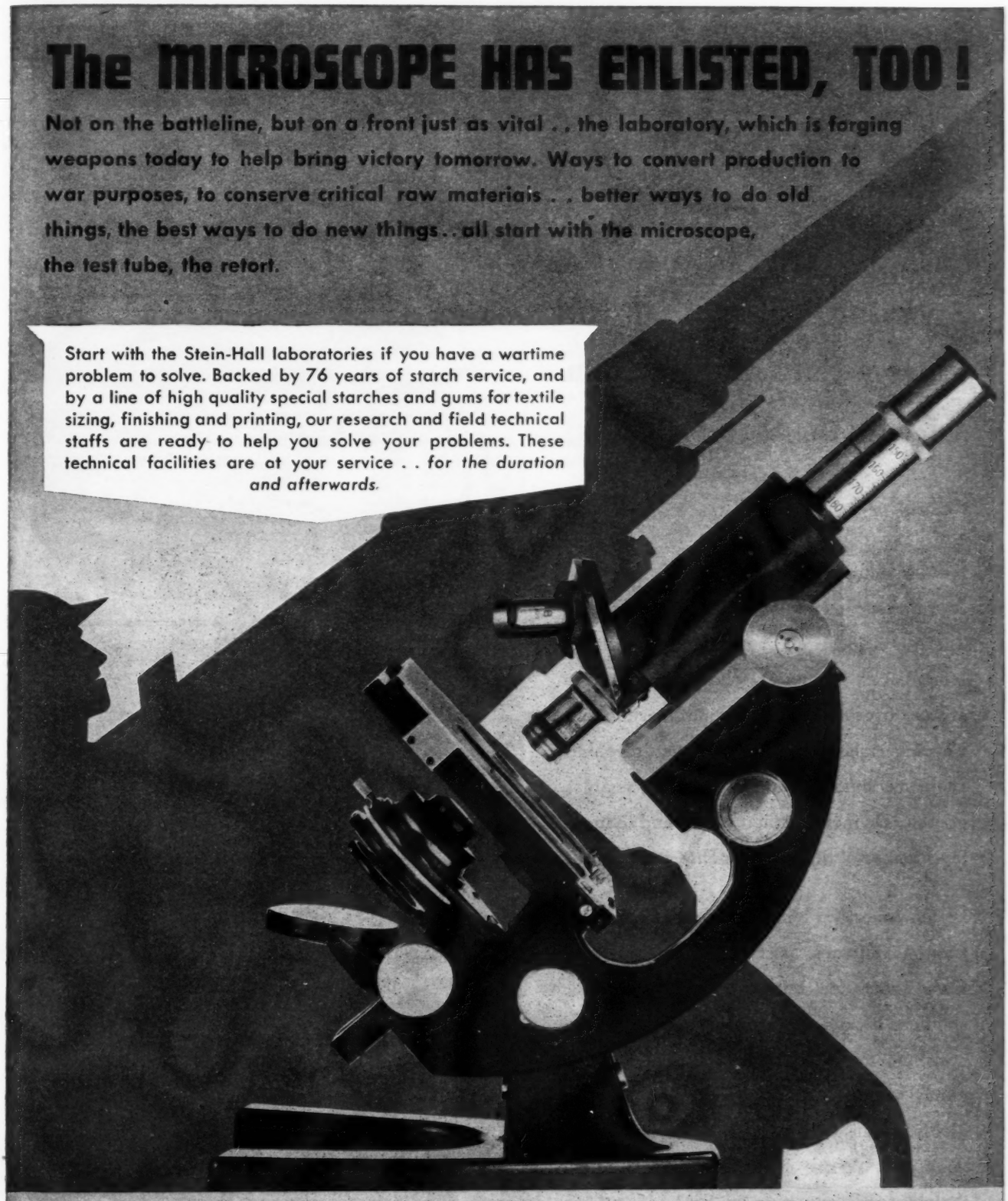
USO

Send your contribution to your local USO Committee or to National Headquarters, USO, Empire State Building, New York, N. Y.

The MICROSCOPE HAS ENLISTED, TOO!

Not on the battleline, but on a front just as vital . . the laboratory, which is forging weapons today to help bring victory tomorrow. Ways to convert production to war purposes, to conserve critical raw materials . . better ways to do old things, the best ways to do new things . . all start with the microscope, the test tube, the retort.

Start with the Stein-Hall laboratories if you have a wartime problem to solve. Backed by 76 years of starch service, and by a line of high quality special starches and gums for textile sizing, finishing and printing, our research and field technical staffs are ready to help you solve your problems. These technical facilities are at your service . . *for the duration and afterwards.*



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A TEXTILE STARCH FOR EVERY TEXTILE PURPOSE

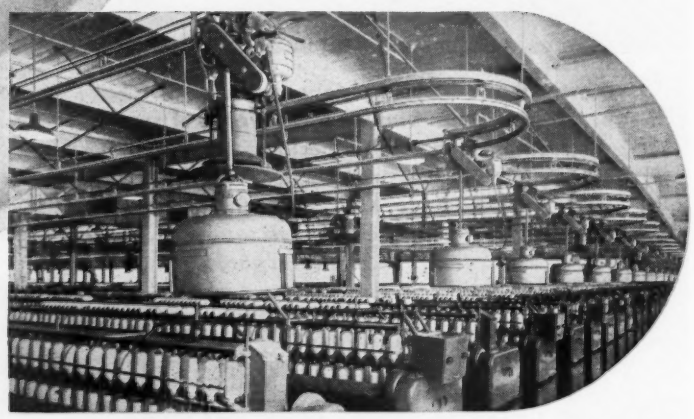
Controlled Cyclonic Cleaning

KEEPS MACHINES PRODUCING FULL TIME

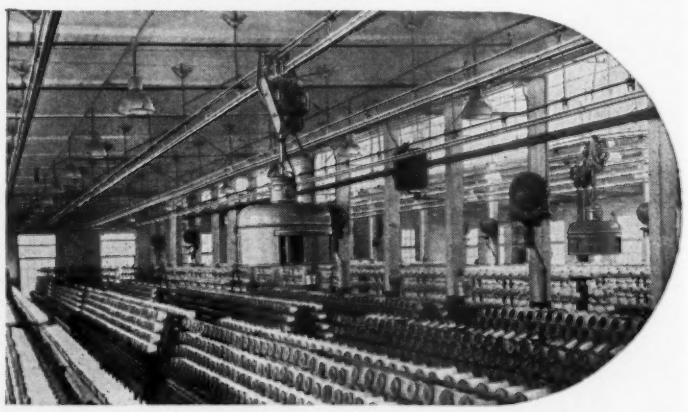
Swirling Column of Air Prevents Lint Accumulation with no Damage to Roving

NOW more than ever before it is necessary to keep machines going at top speeds. There is no lost production when American MonoRail Automatic Overhead Cleaners are at work over spinning, winding, twisting and warping machinery. Automatic cleaning keeps machines producing full time, enables operators to increase their output and reduces the number of gouts or bunches in the yarn.

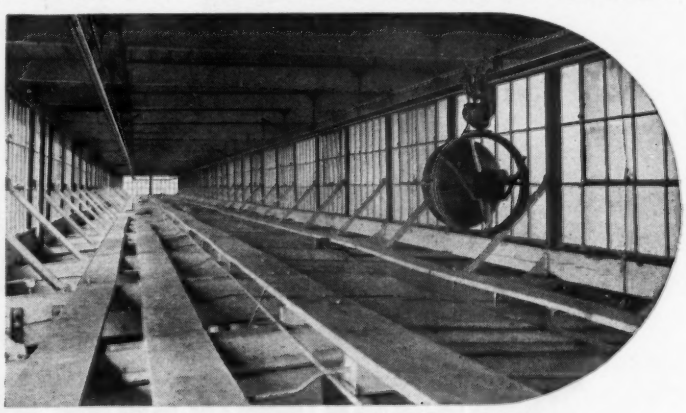
Let an American MonoRail Engineer explain such advantages as better running work; fewer gouts or bunches; less endsdown; spinners handle more sides; lower cleaning costs; no lost production and reduced machine stoppage. This information will be gladly given without cost or obligation on your part. Write us today; we will immediately send you copy of book describing Automatic Cleaning and Overhead Handling in the Textile Industry.



★ Overhead automatic cleaners over long draft spinning frames.



★ Swirling columns of air circulate around cones to prevent lint accumulation.



★ High velocity fan travels within the monitor to keep this section clean.

THE AMERICAN MONORAIL CO.

OVERHEAD HANDLING EQUIPMENT

13106 ATHENS AVENUE — CLEVELAND, OHIO

JUNE, 1942
Volume 106 Number 6

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COTTON

SERVING THE
Textile Industries

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more production-

for textile mills everywhere!

Lint can't choke these motors

Westinghouse Lint-Free Motors are designed for individual drives on pickers, winders and roving, spinning and twisting frames.

Special design insures clean, cool, continuous operation...prevents shutdowns...loss of time.

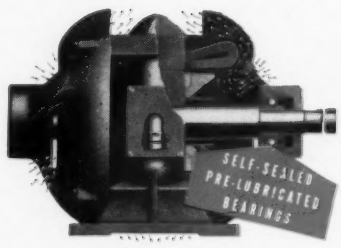
Lint-Free Westinghouse Textile Motors solve one of the most troublesome problems in textile mills—the problem of lint interference with production drives.

Westinghouse Textile Motors are designed to use large volumes of lint-laden air for cooling, without permitting any lint to collect inside the motor. Air passages are exceptionally large. There are no pockets or corners where lint might cling—inner surfaces have a slick, smooth finish.

In addition, motor bearings are factory-lubricated and factory sealed. The grease stays in—lint and dirt stay out. No recurring "grease spots" to invite lint accumulations.

Thousands of Westinghouse Lint-Free Motors are in daily use in round-the-clock operation. For production with less delays, less motor maintenance cost, see Westinghouse. Your representative can give you the complete story. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., Dept. 7-N.

J-21216

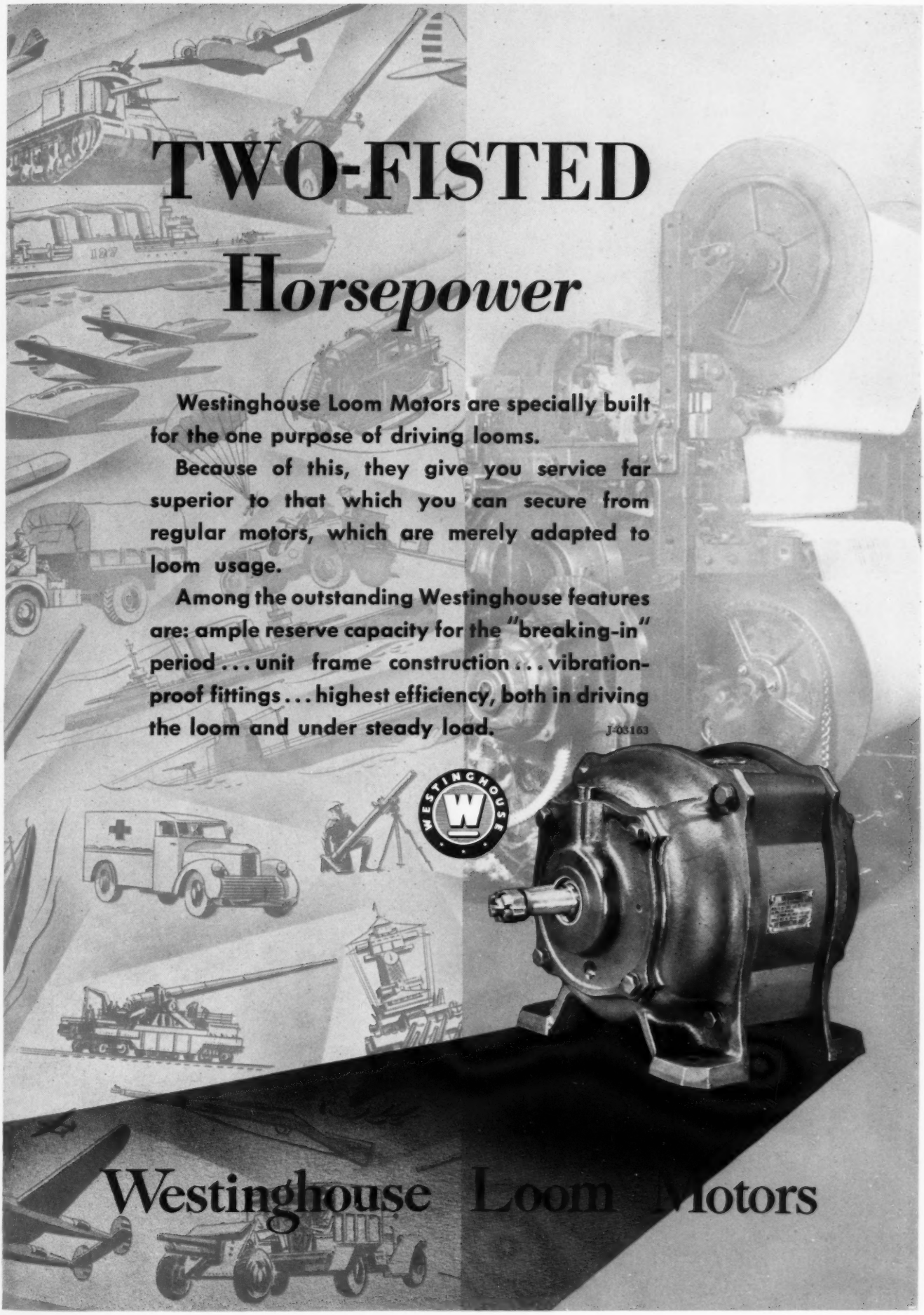


The cleanest running motor in the textile industry. Note the large unobstructed air passages — the compact, sealed ball-bearing construction.

Westinghouse

LINT-FREE MOTORS

This advertisement appears in COTTON for June and November, 1942


TWO-FISTED
Horsepower
Westinghouse Loom Motors are specially built for the one purpose of driving looms.
Because of this, they give you service far superior to that which you can secure from regular motors, which are merely adapted to loom usage.
Among the outstanding Westinghouse features are: ample reserve capacity for the "breaking-in" period . . . unit frame construction . . . vibration-proof fittings . . . highest efficiency, both in driving the loom and under steady load.
J-03163
WESTINGHOUSE
Westinghouse Loom Motors

Radul*

*Pronounced Ray-dull

A Combined De-lustring and Softening Agent for Synthetic Fibres

You can now control the resultant effects on synthetic fibres in *piece goods* and *hosiery* by using Ciba's RADUL . . . due to its excellent dispersion and exhausting properties, the dulling effect is magnified while the problem of settling out and consequent spotting is reduced to a minimum.

The **Ciba** *Laboratory Exists to Serve You!*

Ciba Chemists, Colorists and Service Technicians are ready to cooperate with you to solve your problems.

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SHORTS AND REMNANTS

The Land of the Free

"A few days ago your representative called upon me for the purpose of obtaining my subscription to COTTON. * * * He suggested that he enter the subscription and I could send in the money in a few days. I agreed to this proposal and really meant to do as I agreed, but I received a copy of the magazine yesterday which changed my mind.

"On page 81 [April issue] I read 'In War There Is No Overtime'. When I had finished reading it I was quite convinced that I would keep my money which I made by working overtime, and invest it in war bonds, and let you keep your magazine.

"I have no desire to enter into a controversy with you. On the contrary I am glad that we live in a country where it is possible for us to have our own opinions and to shout them from the housetops if we so choose. However, I do not care to pay you to tell me things I do not wish to hear."

P. R. COURSON

Albany, Ga.

(Mr. Courson was reported, on the original subscription order, as overseer of the cloth room, at the Flint River Cotton Mills. We wrote him in part as follows:

("Naturally, we regret that you decided to permit your disagreement with statements in the article on page 81 of April COTTON to cause you to forego a great deal of helpful information with respect to the operation of your job that we believe you would find in COTTON from month to month. Personally, we try to read a great deal of material with which we cannot consistently agree, primarily in order that we may be stimulated by it and kept informed, but of course the decision in your case is entirely up to you, and we have cancelled your order as requested.")

In the midst of the greatest regimentation that America has ever experienced in the form of the draft, registration and rationing of sugar, gasoline, and more to come, we can still have our own opinions and shout them from the housetops, we can still get together and forget our troubles. For, in short, America is one of the few places in the world where we still have facilities and freedom for enjoying life.

As a nation at war, we can take pride in the fact that our united efforts as civilians, our contributions either directly in participating as employees or indirectly in conserving gasoline, sugar, metals, are making it possible for American industry to reach and surpass the goals set. Tanks, planes, ammunition, and vital war materials are coming off production lines ahead of schedule. The textile industry, an important one in furnishing Army and Navy needs, is producing the greatest output in history with less machinery and manpower than were in use 20 years ago. American industry, developed by free enterprise and one of the wonders of the modern world, is delivering the goods.

Regimentation and rationing now are important in winning a war. But let's not forget that one of the reasons for winning this war is so that we won't have regimentation and rationing tomorrow, so that we will continue to be a "land of the free".

"My Farewell Car"

Talk about scrapping the dies of the automobile industry and starting in all over fresh after the war, brings much theorizing about what the car of the future will be. Also, if you think that cars have about reached the perfect stage, you are in about the same spot as was Mr. R. E. Olds in 1912 when he advertised his new Olds as "My farewell car—pretty close to finality . . . better workmanship is impossible, better materials unthinkable. More of simplicity, silence, durability and economy can hardly be conceived. I consider this car about as close to perfection as engineers ever will get."

And he believed it.

◆

Humor

If the "Little Audrey" jokes of several years ago were still around, there would be a swell chance for one about "is General Hershey the Chocolate Soldier?"

Arkansas would have to be the locality for the motorist who drove into the isolated filling station and asked to have his car filled with gas, and then asked if they had a radio as he would like to hear what was happening to MacArthur. When the gaping attendant said, "MacArthur, who's he?" the motorist said, "Never mind about the gas, just give me four new tires."

◆

Information

"We are particularly interested in the article on 'Luminous Coatings for Textiles —for Blackouts' and we would be very interested if you would find out from Mr. Croen where we may obtain a pyroxylin coating machine . . ."

J. P. REDSTON

Summit Dyeing Co.
Toronto, Canada.

"In your last issue [April] a discussion was written up regarding lickerin-grinding machine. We would appreciate it if you would give us complete infórmation about these machines . . ."

M. F. THOMA

Fitchburg Yarn Company
Fitchburg, Mass.

". . . Enclosed herewith a sample of a plastic material, which is a waterproof cotton, and which we are using for the manufacture of dress shields. We would appreciate it very much if you would kindly furnish us with names and addresses of mills who could supply us with a similar cloth . . ."

LOCKFAST-STEINER, LTD.
Montreal, Quebec, Canada

"I wonder whether it would be possible for you to furnish us with information about the natural waxes, oils, and resins on raw cotton yarn . . ."

HARRY H. PACT

Burlington Mills Hosiery Co.
Greensboro, N. C.

TWO WAR-TIME ISSUES

● **Next month, in our July issue, we will present a special section on the basic properties, blending and processing of rayon, synthetics and all fibers in a "Fibers and Fiber Blending" number. Prepared by the Research Department of Callaway Mills, it will present useful information to mills who are facing changes in operating and production with the elimination and restriction of some fibers today. Also, it will serve as a reference for mills who may be making changes tomorrow.**

In October, we will feature the theme of the current promotion program of the National Cotton Council and the Cotton-Textile Institute: "Cotton Freshness—for Fighting Trim" in a Cotton Promotion number. To win permanent favor with war-time customers, the cotton-textile industry is conducting the most extensive advertising and research program in the history of the industry. With the approval of the Council-Institute, the October number will bring this program to the mills and to their customers, with special distribution to the major consuming groups.

"Thank You"

"I have just read the article 'Merit System for Grading Employees' on page 139 of the April, 1942, issue of your magazine, COTTON, and I think it is a very fine article.

J. O. WALZ

Westinghouse Electric & Mfg. Co.
Lima, Ohio

"I have not written you since your Maintenance Issue [Feb.] went to your subscribers but I want to congratulate you on this number."

R. B. NEWTON

Riverside & Dan River Cotton Mills, Inc.
Danville, Va.

◆

Reputable Advertisers

"I have no doubt as to the reliability of the company for I do not believe COTTON would accept advertising from anything but a reputable concern."

L. R. PITTENGER

Alexander City, Ala.

(We hope to continue to merit the confidence of Mr. Pittenger and our other readers, as this represents one of the values of advertising.)

◆

More Knitter Hints

"Will you kindly send us six prints of your "Knitter Hints" carried in the March, 1942, issue?"

JAMES L. WILLIAMS

Burlington Mills Corporation
Greensboro, N. C.

◆

Cleaning the Mill

"We are making a study of our cleaning and scouring schedules and we are anxious to read any material which we can obtain."

W. J. HENDESS

Drummondville Cotton Co., Ltd.
Montreal, Que., Can.

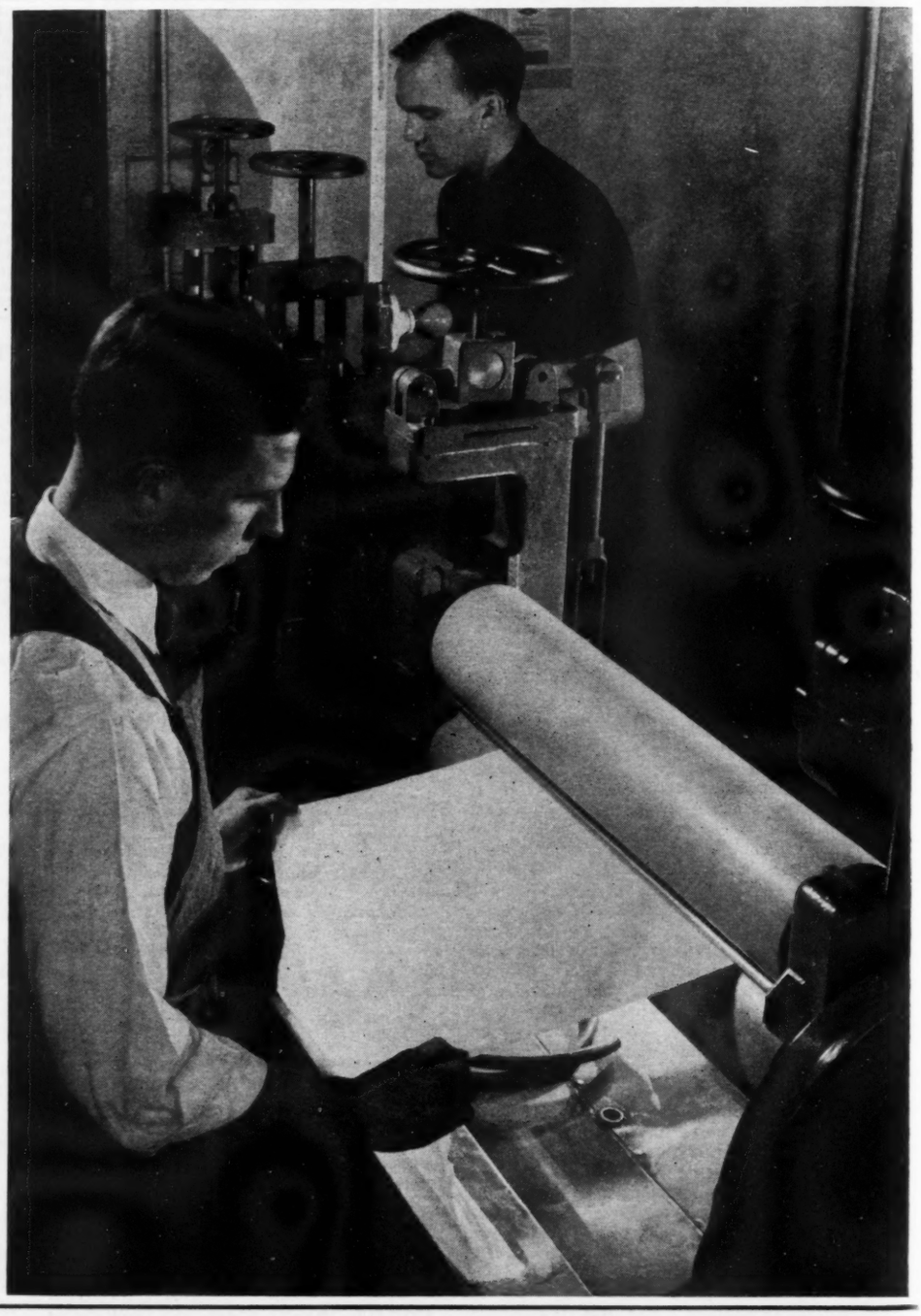
(The best material we know of on the subject was a series of four articles on "Keeping the Mill Clean" by Erwin Hard, presented in our issues of September, October, and December, 1941, and January, 1942, and that's no idle boasting, as we had favorable comments on this series from mills throughout the industry.)

Is the set ~~light~~ *heavy*?

PAD AND CALENDER—Padding and calendering are probably two of the most difficult plant operations to reproduce satisfactorily in the laboratory. However, after much experimenting over a period of years, the Rohm & Haas laboratory has developed both a pad and calender which closely simulate mill conditions. The pad, shown in the foreground, and the calender, shown in the background, are electrically operated with controlled regulation of speed, pressure, and heat. The calender may be used for both plain and hydraulic calendering as well as for back-filling.

SEMI-WORKS FOR THE INDUSTRY — Specially-designed padders, calenders, drying ovens, slashers, and other indispensable textile equipment make the Rohm & Haas Sales Service Laboratory a valuable semi-works for the entire textile finishing industry.

In this complete textile finishing plant in miniature, new products receive tests under conditions almost exactly similar to actual mill conditions. Here, customers' problems are evaluated and checked to find the best possible solution. Let our semi-works for the textile industry assist you with your operating problem.



TRITONS—*Synthetic detergents, emulsifying, wetting, and dispersing agents.*

RHOTEXES—*Synthetic gums for sizing and thickening.*

DEGOMMAS—*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES—*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

LYKOPON—*Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

COTTON
SERVING THE
Textile Industries

Vol. 106 June 1942 No. 6

The Roots of Inflation

DURING THE past several weeks the tree of inflation has undergone some extensive pruning, but our Government almost unanimously refuses to do anything to its roots except water and fertilize them. Pruning the limbs, which are merely the outward signs of powerful and vigorous roots, will never control this inflationary growth. We have got to strike at the roots and either dig them up or keep excessive water and fertilizer away if we expect to control the upper growth satisfactorily. Pruning is too painful to too many people to be kept up indefinitely and to work satisfactorily.

Inflation is rooted in the disbursement of too much money to too many people, and it is quite hopeless to control inflation when a torrent of unearned and unnecessary money is put into the hands of millions of spenders. Statisticians estimate that the national income in 1942 will run well over 100 billion dollars. If this meant that we were creating 100 billion dollars' worth of wealth it would be the best news this country could possibly expect to have, but the real meaning of this news is quite the contrary. The only reason the national income will run over 100 billion dollars is because we are paying millions of people twice or three times or five times as much as they ever earned before or ever hoped to earn, to make things that not one single citizen of the United States can buy or use to improve his standard of living. Under the stimulus of plentiful Government money, where no thought is given to value, we are paying billions of dollars for which there is no return.

An example will illustrate this. A mill executive recently mentioned visiting a large machine shop which was now handling some ordnance work along with its regular production. In that part of the shop still devoted to textile machinery were mechanics with years of experience and the skill necessary to make high-class machines. These men were getting good wages, for which they had been perfectly satisfied to work for that company for many years. In another department of the same factory, where the ordnance work was being carried on, the employees were almost entirely greenhorns with no experience as machinists whatever, who had been given a quick course in how to tend certain automatic machines, and their wages were approximately three times the wages of the skilled mechanics in the other section of the factory. None of these men could have held a job in competition with a skilled mechanic. It was impossible that they could have earned as much as a skilled mechanic should earn, yet because they were getting Government money, with no urge to economy, they were being paid a fabulous wage for what they did.

A SIMILAR CONDITION exists among the textile mills, and an increasing number of mill managers are complaining about the unsettled conditions among their help. Several mills have reported a labor turnover of 100 per cent a year. Only a few days ago an employer of 2,200 cotton mill operatives reported that in the past 10 months he had hired 2000 persons. When asked the cause of this terrific labor turnover, these managers all seem agreed that the major reason for it is too much wages. Cotton mills which used to run 55 hours a week were cut down to 40 hours and the wages increased so that the help got more for 40 hours than they used to get for 55. Now, numbers of them are back on 55 hours, and sometimes more, but are getting time and a half for the overtime, with many of them drawing double time for working on Sunday. Consequently, thousands upon thousands of these people are making twice or more than twice as much as they ever made before in their lives.

In a normal, ordinary boom, with this wage condition, these people would buy new automobiles and plenty of gasoline to enjoy them. Now they can't buy cars or gasoline, and they have twice as much money as they have been accustomed to spending. According to reports from many mill managers, numbers of these people are leaving their jobs without assigning any reason for doing so. They just have too much money in their pockets and they are restless. Many of them will quit and be gone a few weeks until they have spent their money and then come back and want their jobs again. There is nothing unusual about this and anyone who has had experience with handling large groups of people will recognize it as an inescapable symptom of boom times.

ALL OF THIS boom in the mills and everywhere else is caused by one single thing—the spending of incredible quantities of tax money and borrowed money. There is no justification in reason for paying people twice as much for doing the same thing they have always done when they are being paid with public money, and when there is less for them to buy with their

money than there was when they were only paid one-half or one-third as much.

As is so often the case with our Government, we now have one of its departments pruning the tree of inflation, while another department is fertilizing its roots. It is the same situation that has existed with regard to the labor union monopolies. Mr. Arnold is encouraged to crack down on corporate monopolies, but the moment he touches the far more dangerous labor monopolies, another department of the Government annuls his efforts. While Mr. Henderson is making valiant and desperate efforts to hold down retail prices and to restrict unnecessary purchasing which would soon dry up the reduced stream of consumer goods, other departments of the Government are flatly refusing to exercise any control over the stream of unearned money that is being poured out to wage earners. We use the expression "unearned money" advisedly. When years of experience in a free competitive economy have placed a certain value on certain kinds of services, any payment much in excess of that value is unearned. To be utterly logical, wages should be reduced in time of war instead of increased, because there is going to be less to buy and there is going to have to be a reduction in the standard of living, and the only way to effect such a reduction sensibly is for people to have less money to spend.

Industrial leaders have repeatedly pointed out that high wages are not necessarily an incentive to production. Higher payments to individual workers for unusual efficiency are a big incentive, but high wages generally are not. If all of the men in a factory make $25.00 a week each and they are told that superior performance can enable individuals to make $30.00 or $35.00 a week, this can be a tremendous spur to increased production, but merely raising the wages of everyone to $30.00 or $35.00 a week will usually accomplish nothing except further wage increase demands. An incentive is usually something you haven't got. When you get it, it isn't an incentive any longer.

There are several million persons now engaged exclusively in war work who are being paid a great deal more than they can earn by any rational method of computation. Six months from now there will be more of these people, and in a year, still more. As this number increases, the inflationary pressure will increase. We are now trying to keep this pressure down by giving people big wages and then scheming up some method of taking the money away from them after they have had it. How much simpler it is not to give it to them in the first place! If we don't give it to them, there is no necessity for taking it away again, and there is no good method of taking it away without unjustly taking away from those who can ill afford to have it taken. Any tax scheme based on the theory of giving a man money that he doesn't earn, and then immediately taxing it back from him, is just plain stupid. The sensible plan is to keep the cost of the war down, rather than constantly trying to get it higher and then meet these increasing costs with increasing taxation. It is always easier to keep something away from a person than to take it away after the person has had it. A man who has been accustomed to working for $25.00 a week is satisfied with a job at $30.00, but if you jump him from $25.00 a week to $75.00 and then try to cut him back to $50.00, he will bitterly resent it and think that the country is going to the dogs.

The time to prevent inflation is before it starts. Dig up the roots before they branch out and get firmly established. By all means do not carefully water and fertilize these roots and then expect pruning to keep the undesirable growth under control. A great howl has gone up from the labor unions that there must be no control of wages, although the unions seem to be thoroughly in favor of controlling the cost of everything else. Unless wages are controlled along with other things, and not only controlled, but kept within reasonable bounds, we are going to have inflation and there is no possible way to avoid it. If millions of people have billions of dollars to spend and nothing to spend them for, and they save this money in the form of bonds or stocks or savings bank certificates or insurance or anything else, they are simply saving depreciated money, because the value that it is supposed to represent simply isn't there, and no amount of conversation can put it there. Most of the terrible suffering that our southern states endured in reconstruction times was caused by the inflation during the Civil War which had destroyed all of the capital in the southern states. Those states which were not invaded were almost as bad off as the ones that were, because the printing presses had made money and all kinds of securities worthless. The printing presses can do this just as effectively by issuing too many Federal bonds as by issuing too many Federal bank notes. The Federal bonds are always theoretically convertible into bank notes, and if there are too many of them, an attempted conversion will soon make them just as worthless as shin plaster money.

It is highly desirable that everyone should buy bonds so that when the war is over everyone will have an interest in the value of these bonds and in the stability of the country, which is all that can guarantee the value of these bonds. Unless, however, everybody buys bonds out of a portion of rational earnings, the bonds will not have the value supposedly attached to them. When people are paid fictitious and unreasonable wages that they can not possibly earn, and are asked to accept a portion of that pay in Government bonds, we are beginning in effect to pay people with shin plasters.

THIS WAR is going to be won, as it must be won, by hard fighting and hard work, in which everyone contributes that which he is best able to contribute to the common good. A man who contributes twenty dollars' worth of work for a hundred dollars' worth of wages is not contributing to the country's defense, but to its ultimate ruin. The politicians who govern this country must certainly be smart enough to know that, but they evidently are not courageous enough to admit to the people that they know it. Most of the people know it, but no individual is going to turn down a fat job at three times too much pay. To expect people to do this is like expecting them to use three gallons of

(*Continued on page* 108)

The early struggles and the achievements of a southern textile development — an example of

"American Industrial Freedom"

By
John F. Schenck, Sr.
President and Treasurer,
Cleveland Mill and Power Company

IN RELATING the beginning and gradual development through many years of the textile enterprise with which I have been connected, I should include not only our successes and growth, but also the handicaps and reverses. I am telling a story of an ambitious struggle against adversity, which in substance would properly fit many other textile developments in the South, especially the pioneer developments, most of which in their infancy were burdened by two big handicaps: inexperience and poverty.

These pioneer developments were started in a period of abject poverty, in a dismal depression such as was natural to a vanquished people at the termination of a bloody 4-year Civil war.

My father, Major H. F. Schenck, who was the promoter and principal owner of our small parent plant, was not only weak financially, he was very weak physically. He was just beginning to recover from a severe case of tuberculosis, contracted in the Civil War, when he decided to build a little cotton mill, with the assistance of one or two associates.

For that purpose, an old grist mill site in Cleveland County, N. C., on Knob Creek about one-half mile from where that creek empties into First Broad River, was purchased. There the little factory was built in 1873 and the mill village there was known for years as "Cleveland Mills". The factory was driven by the water of the creek.

Handicaps at the Start

The owners of this development were handicapped by the fact that they did not have sufficient capital to construct an up-to-date building and equip it with the latest improved machinery. A substantial wooden building was constructed, but the equipment was second-hand machinery that had been discarded by a northern manufacturer. The mill was lighted at night by kerosene lamps and heated by wood stoves. It was very small, requiring not more than 50 horse power to drive it. The first and only product manufactured in the beginning was 8s single yarn put up in skeins, packed in 5-pound bundles and, for awhile, carried by wagon to cities and good size towns for sale. After a few years, some twisters were installed and plied yarns were produced, mainly 4-ply. This was also put up mostly in skeins and packed in 5-pound bundles.

In the beginning a large proportion of our product was used in the South. Our southern people were too poor to purchase the high-priced cloth made in the North, and they used much of the yarn from this little factory for weaving, by hand, cloth for themselves. In this section of the country much hand-woven cloth, known as "jeans", was made for men's clothing. The yarn out of which it was produced was usually dyed either blue or brown, in a cheap crude manner.

In the first great exposition held in Philadelphia some of our 8s/4 yarn was on exhibit. To the keen eyes of a certain textile commission sales agent by the name of James E. Reynolds, the sample from the little Knob Creek factory looked good. He took note of the name and address of the manufacturer and by letter got promptly in touch with Major Schenck, the manager. Their correspondence led to a visit by Mr. Reynolds.

The meeting of this shrewd, wealthy and ruggedly honest Yankee with an equally honest ex-soldier and officer of the Confederate Army was the beginning of a life-long friendship and of a business arrangement which for many years was mutually profitable, pleasant and satisfactory. Mr. Reynolds, like many other northern capitalists, was attracted to the South, partly on account of the lower wage scale and lower living expenses and partly by the reliable and friendly character of our laboring classes. Northern capitalists, having great faith and confidence in our people, and having no fear of a national minimum wage law at that time, gladly invested millions of dollars in southern textile developments; thus providing more profitable employment for many thousands in the impoverished and isolated districts of the South. Mr. Reynolds had great confidence in the character and executive ability of the manager and principal owner of the little Knob Creek factory, and therefore insisted that he and the manager should together build a larger factory, up-to-date in every particular. The proposition was accepted. A new factory corporation was organized (a "close corporation") composed principally of the Schenck and Reynolds families. The property of the little Knob Creek company was taken over and merged with the new development, which was located at Lawndale, N. C., on First Broad River, about 2½ miles south of the little Knob Creek factory. The new factory was constructed and started operations in 1889. Again an old grist mill site was purchased for a location and the factory was driven by power generated from the stream by which the factory stood.

A few years after starting the new and larger plant, the small Knob Creek development was abandoned and dismantled and such machinery and structures as

were yet fit for use were moved to Lawndale. Our Lawndale plant was specially designed and equipped for manufacturing a variety of plied twines and cordage. In the beginning two of its biggest items were 4-ply carpet warp and wrapping twines.

The Plant Diversifies

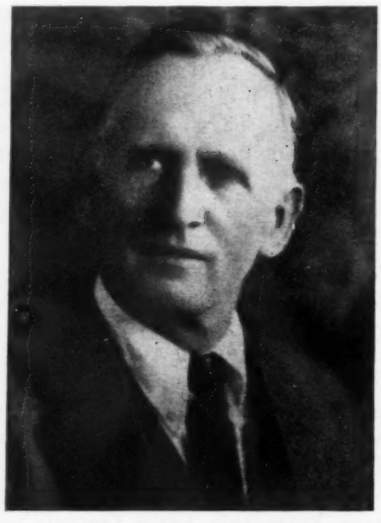
For several years after our Lawndale plant was started, we manufactured and sold all of our product in the natural. A great portion of it being sold in skeins to be bleached, dyed or mercerized elsewhere. Some time afterward, we added a dyeing and bleaching department which has gradually grown into a plant of rather large capacity. Later we annexed to our dye plant a well equipped mercerizing department. We also added a department with machinery for polishing twine and cordage. A few years ago we installed and constructed a considerable amount of machinery for producing rayon twine and cordage. We are now equipped and organized for manufacturing a large variety of fancy thread and cord specialties, perhaps at least 75 different items. Part of our equipment had to be designed by ourselves and built in our own machine shop.

In our endeavor to develop a successful manufacturing plant, and an attractive factory village in an isolated section, we were confronted by two handicaps in the beginning. That of inadequate transportation and that of inadequate educational facilities — handicaps which added so much to the expenses of operating our plant that, as a compensation for such handicaps and to enable us to compete with plants in cities in other places more favorably located with reference to transportation and markets, it was necessary for us to operate our plant on a wage scale somewhat lower than that of our better-located competitors. The lower cost of living in all such isolated southern communities—from the labor standpoint as well as from the manufacturer's—fully justified such a lower wage scale.

Our most serious handicap was isolation; our remoteness from railroad facilities, from textile markets, and from factory supplies. Our Lawndale plant was located 12 miles away from Shelby, our nearest railroad station.

In those days the public roads during rainy seasons were sometimes impassable. In spite of the great amount of work which our company voluntarily did to improve the public highway, we were often marooned by rain, mud and ice. To operate our plant successfully it became absolutely necessary to incur the additional expense of constructing, maintaining and operating a railroad.

For a number of years the village of Lawndale was badly handicapped because of the lack of good high school facilities. To remedy the situation at Lawndale a corporation was organized and



John F. Schenck, Sr.

a charter obtained for building and operating such a school. The people in and around Lawndale joined with the officials, stockholders and employees of our textile corporation, and bought high school stock. Good school buildings were erected and a very large and excellent high school was maintained for many years. This, without as much as one cent of Federal Government assistance. An education was thus placed within easy reach of many hundreds of boys and girls.

Besides realizing personal satisfaction and moderate financial gain from our plant, we are thankful that our comparatively small plant has provided employment for so many persons. When running full time we have a little over 600 on our payroll. We also feel that our corporation has been worth something to our nation and state. We have within the last 20 years paid over $400,000 in taxes.

We are far from claiming sole credit for the success which we have attained and for the worthwhile things which have been accomplished in Lawndale for the public good. We wish to express our thanks to and admiration for our faithful employees who have for over 50 years assisted us, and who even when unionized "flying squadrons" were doing their utmost to close down all textile plants in the South, remained loyal to us and stood by us 100 per cent. We wish to express our gratitude to many of our neighboring farmers who have always been our friends, and who during that same desperate textile strike assured us they would assist us if we needed their help, to protect ourselves against "flying squadron" invasion.

Some Early Problems

I think it not inappropriate to digress somewhat in this narrative and refer to the struggle of all southern people during the terrible depression following the Civil War. How, when they were clothed in homespun garments and shod in home-cobbled shoes; how, when they were so poor that they could not afford sugar and had to sweeten their coffee with molasses; how, when such a thing as Federal relief was not even dreamed of, these poverty-stricken southerners, on their own manhood and womanhood, fought their way out of the darkest and most dismal depression ever experienced in this country.

The South's successful and victorious recovery, without Federal relief, is a most conclusive proof of the absolute falsity of the recent foolish political doctrine that when we are affected by an economic depression, donations from Washington to individuals and promiscuous Federal extravagances are necessary to save American civilization.

During the comparatively recent and comparatively mild depression of 1932 and 1933, every county in every state of this union, without gifts from or inter-

ference by the Federal Government, could have as always in the past, taken care of its own unfortunate and destitute citizens. Local relief, provided at county expense and distributed by officials of each county to their own needy citizens, would reach the needy in the quickest and most economical way; and inasmuch as the officials and the citizens of a county are in best position to know who in that county are most needy and most deserving, charities and help would thus be more wisely and justly distributed.

If because of a local calamity it became advisable for a county or state to obtain financial help from the Federal administration, for relief purposes, such help should be obtained in the form of loans to be repaid in cash and not in the form of gifts to be repaid by votes. The assumption of the so-called relief program by the Federal government was a shrewd and dangerous political trick to undermine constitutional state rights and independence by relieving the states of their usual and proper responsibilities. All of this principally for the purpose of promoting political relief rather than human relief, and for the purpose of centralizing unusual power in the Federal government and endowing its executive with more power and still more power.

"American Industrial Freedom"

Emphasis should be placed on the fact that the marvelous and widespread business recovery and growth in the South since 1865 was due to "American industrial freedom".

What is "American industrial freedom"?

It is the right of all free normal adult American individuals, and all duly authorized corporate persons of America, to freely trade and deal with each other in the operation of legitimate and useful industries; also the right of every such individual and corporate person to refuse to trade or deal with others. Also, the right to make such trades and deals, to buy material, labor and other commodities at the lowest prices possible, and the right to sell material, labor and other commodities at the highest prices obtainable.

This "industrial freedom" for over a century and until very recently has been fully exercised and enjoyed by our people. As a consequence, during that period, our nation became the most prosperous, the most peaceful, the most civilized, the most satisfied, and the happiest people on earth.

That American freedom is now being destroyed. Bolshevik regimentation is substituted in its place, and this nation will suffer accordingly.

Past experience and observation teach that when and where American industrial freedom is permitted and maintained, prosperity will prevail; and, if it is not obstructed by artificial barriers, such as minimum wage laws, etc., it will, like water, naturally flow into the depressed locations, thus distributing itself broadly and evenly.

The textile minimum wage law now in effect, under which isolated and handicapped industrial plants are required to pay as high wages as those operating in better locations, has been impeding widespread industrial growth and will continue to do so. If such a minimum wage law had been passed soon after the Civil War and if the Supreme Court had been sufficiently "packed" to declare it constitutional, the South's hope and opportunity for industrial development would have at that time been utterly destroyed. In that period a large group of representatives in Congress advocated the passage of bills which were intended to injure and humiliate the South; but the South was, in several instances, protected by an honest, wise and independent Supreme Court.

Having given a brief history of the struggle and growth of our own little industry, we repeat that this narrative closely fits most other pioneer southern industries which have succeeded mainly because they were permitted to enjoy American industrial freedom.

At this critical hour the most important question pertaining to us and our textile plants is not "What of the past?" but it is, "What of the future?" Shall our industrial plants be operated and controlled by the owners and builders thereof, or shall the control under Government sanction be taken over by politically strong outsiders? I am pessimistic. I honestly believe that the constant passing of genuine Americanism and the continuous drift toward fascistic and Russianistic regimentation has threatened, frightened and discouraged business growth; and will continue to do so until the recent political trend is checked and reversed.

"Genuine Americanism"

What is "genuine Americanism"? A true illustration is the best definition.

A genuine American is a man, rich or poor, who is always ready to *voluntarily* play the part of a "good neighbor"—a man whose latchstring always hangs out, and who always gladly welcomes a sincere neighbor who comes to pay a respectful social visit, or who comes to receive or give honest advice and counsel.

On the other hand, a *genuine* American, in his heart of hearts, naturally detests chronic meddlers —those who persist in butting into the private affairs of others. To a *real* American, such an intruder is about as welcome as a rattlesnake or a skunk.

A typical American is a hard-working, honest man of good common sense, a man who diligently attends to his own business, but is always ready to accommodate a respectable neighbor.

A typical American may be weak financially and may live in an humble home, on rugged land, and may plough a bull; but if he is true to his inborn American instincts, he, above all else, values character, consistency, sincerity, freedom, and independence.

He would rather cultivate that rough land, knowing that it is *his* land; and plough that bull, knowing that it is *his* bull; and raise a crop of corn, knowing that it is going to be *his* crop—than to fare much more sumptuously by surrendering his liberties and his individuality, or by kow-towing to political dictation.

That kind of a man is, indeed, a real American! Blessed is a country or a community which is filled with men and women of that spirit —for of such is the kingdom of respectability.

This fluorescent troffer installation at the Macon (Ga.) mill of the Uxbridge Worsted Company provides 50 footcandles of comfortable illumination. The units are recessed in the ceiling in rows on 5 foot-4 inch centers and special maintenance keeps the system at its top efficiency

Applying Fluorescent Lights to Textile Mills in Wartime

By George J. Taylor

Nela Park Engineering Department
General Electric Company

WITH PRODUCTION goals higher today than ever before, textile-plant managers are doing everything possible to increase mill facilities. A fraction of a per cent in weaving efficiency, a small gain in spinning, a little faster spooling — these are the small items that add up to significant increases in over-all production to clothe and help equip our fast-growing army and to supply the multitude of other wartime textile requirements. Civilian needs will also be served—the textile industry is one that *will* fulfill this latter requirement. The nation as well as the Army must be adequately clothed.

Unfortunately, it is not possible to simply speed individual machines up to the required rate and thus whip the production problem. So often the workmen and not the machines are the limiting factor. Here is where good lighting can help, for the ease with which working eyes can see the task is definitely a factor in production efficiency. That more and better light promotes quick and easy seeing is now well known, proved by field experience and hundreds of laboratory tests.

The readers of COTTON know how fluorescent lamps have made high-level comfortable lighting economically feasible in the factory. A general article discussing the characteristics of fluorescent lamps and their textile-illumination potentialities appeared in this magazine over a year ago (March, 1941—page 105). A review of those fundamentals will be worthwhile for some—for many others who by now have made fluorescent installations in their plants, the lighting quality improvements are now a matter of experience.

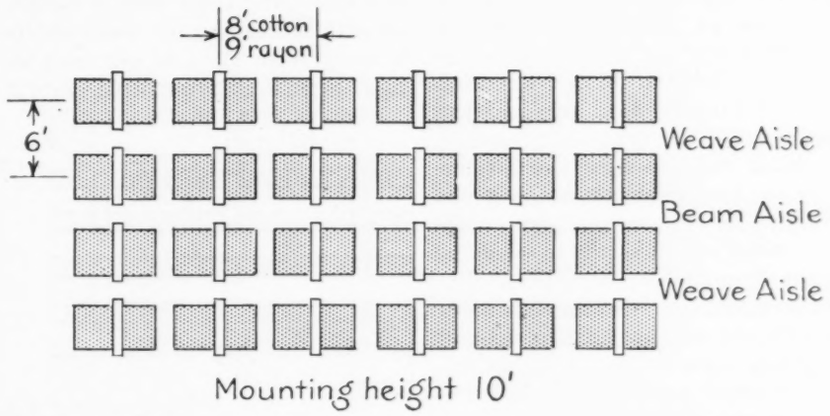
In the four years since fluorescent lamps were made available, many textile operators have found them satisfactory for the critical seeing tasks characteristic of the industry. Also, much has been learned about installation methods. Experience has been a good teacher in that respect—in fact, certain techniques have been developed which tend to dictate present-day applications. The sketches contained in this article are based upon actual experience of satisfied users and illustrate the new techniques. For the benefit of busy textile-mill executives and engineers, the reading time has been cut down in favor of the more quickly understandable sketches. The photographs illus-

trate some actual installations.

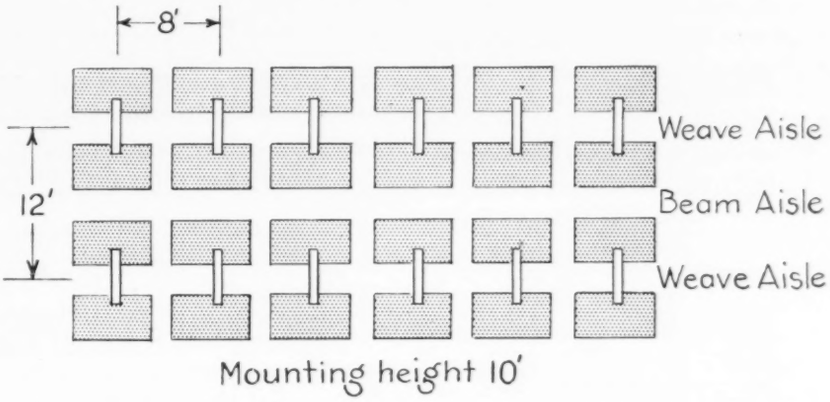
The suggested lay-outs are based on typical machine arrangements in the textile mill and the illumination results such systems provide are appropriate for the all-out production effort. Acceptable mounting heights are given in most of the examples, though the actual factory conditions (beam locations, humidifier level, etc.) may dictate some other height. The footcandle level will be reasonably uniform if the spacing does not exceed the mounting height. In weave rooms lighted with one unit per pair of looms, the reflector should be over the weave aisle as shown in Sketch No. 2. This builds up the illumination on the weave side of the loom where most of the work is done.

Sketch No. 3 shows how to provide satisfactory illumination for rayon and colored cotton looms by supplementing rather than supplanting the existing lighting outlets. A fluorescent reflector at the existing outlet (shown as a solid circle) and another halfway between outlets requires rewiring only to the extent of running conduit in 9-foot sections from the existing to the additional outlet. In some cases, heavier wiring may be required but usually this can be done without changing conduit. While such a system permits a great lighting improvement, there will be more light in the space between looms than on the cloth. This can be overcome only by moving outlets down the weave aisle to a position centered over the looms as in the first two sketches, which entails more new wiring changes. Similar improvements can likewise be made where Cooper Hewitt mercury lamps are used on the wider spacings. The typical system of 300-watt Glassteel diffusers can, of course, be expanded and the footcandle level doubled by locating additional Glassteel units in the manner just described. This, however, requires double the wiring and transformer capacity.

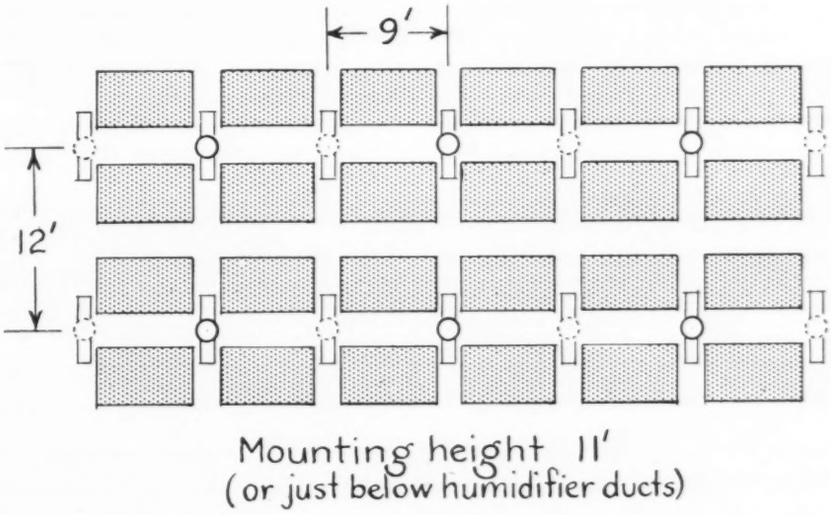
A word about continuous-row fluorescent lighting. Economies can be effected in wiring costs by mounting industrial reflectors end-to-end below continuous channel and at the same time such a system is flexible and easy to install and maintain. In addition, continuous-row installations have an excellent appearance and provide good visibility, particularly on polished convex surfaces. Continuous rows of reflectors have still another definite advantage in the weave room from the stand-



Sketch No. 1. Rayon and colored-cotton goods looms can be lighted by fluorescent reflectors mounted over each loom as shown. The spacing down the loom row will be about 8 feet on centers for cotton and 9 feet for rayon. The units should be mounted about 10 feet high. It is, however, preferable to mount them below the humidifiers (if they are not too low) to avoid vapor spray on the lamps and reflecting surfaces.

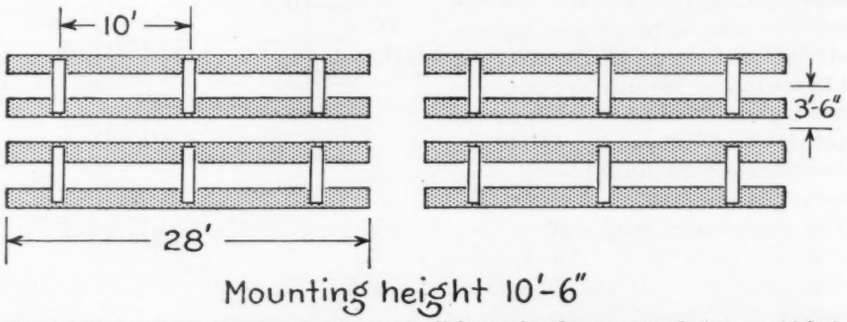


Sketch No. 2. About half as many luminaires are needed for lighting white cotton looms. The units can be centered 8 feet apart over the weave aisle. The actual spacing is about 8 by 12 feet. The illumination level will not be uniform—there will be only about 50 per cent as much light on the beam side of the loom, but most of the work is done on the weave side where the footcandle level is highest. Continuous rows would build up the illumination level in the beam aisle principally.

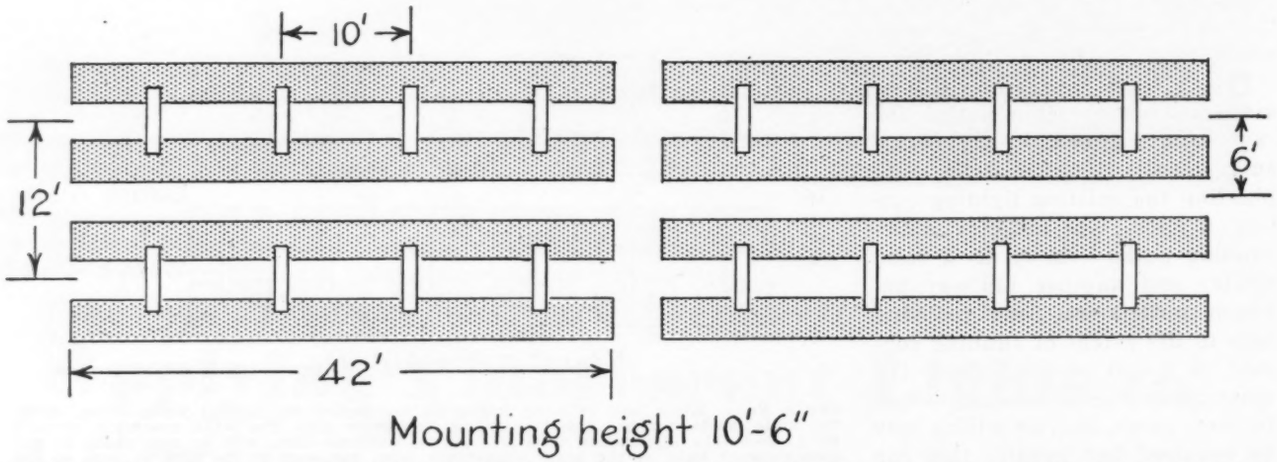


Sketch No. 3. Rayon and colored-cotton looms can also be lighted as shown in this sketch. If an outlets exists for each 4 looms, a unit can be installed there and another added between former outlets. Thus the installation and wiring costs are somewhat less. Any of the following types of luminaires might be employed: 2-lamp RF units, 2-lamp 100-watt Mazda F units or 3-lamp 40-watt Mazda F units. Existing systems commonly use one 300-watt Glassteel diffuser or one Cooper-Hewitt lamp for each 4 looms represented by the solid circles.

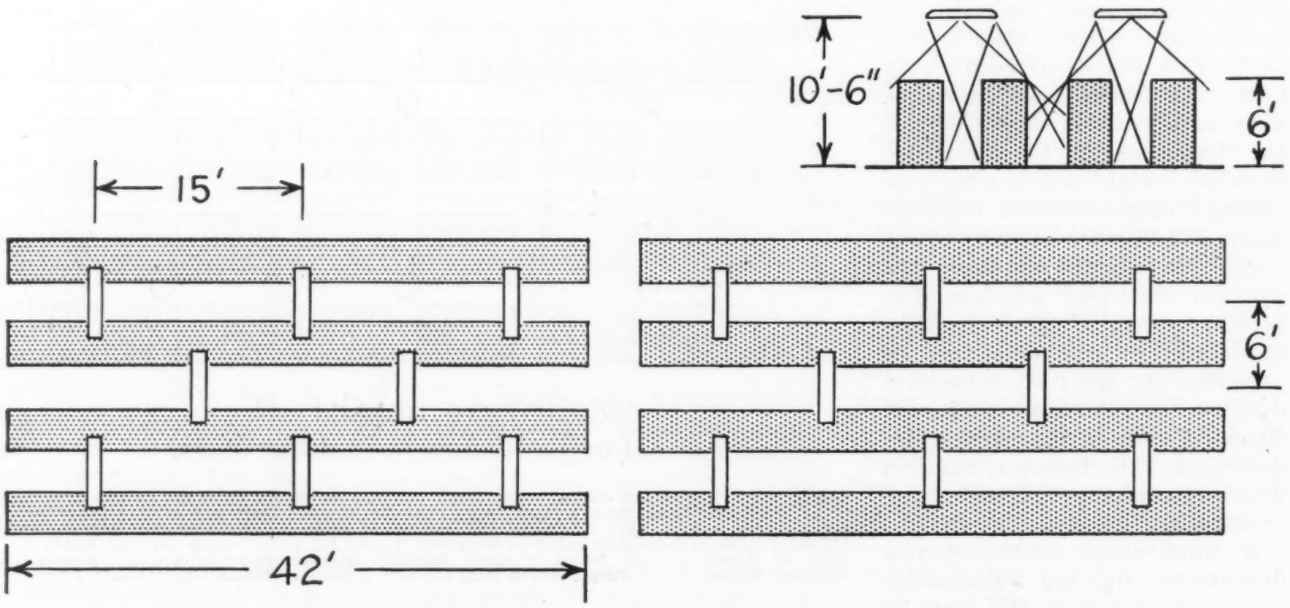
point of creating identical shadow patterns on all looms. Thus the operator tending several machines does not have to learn more than one different way of locating broken threads, tying-in, threading heddles, etc., amongst the dissimilar shadow arrangement on looms lighted in the conventional fashion when one reflector is used for each four looms. Significant improvements in weaving efficiency attributed to new continuous-row lighting systems are probably due in no small part to such uniformity of visual problems. For example, the lighting improvement program at the Uxbridge (Mass.) Worsted Company's mill is credited with increasing the weaving efficiency from 81 to 84 per cent on one type of automotive fabric with a 22 per cent decrease in mending time. The old lighting system produced about 18 foot-candles, the newer installation



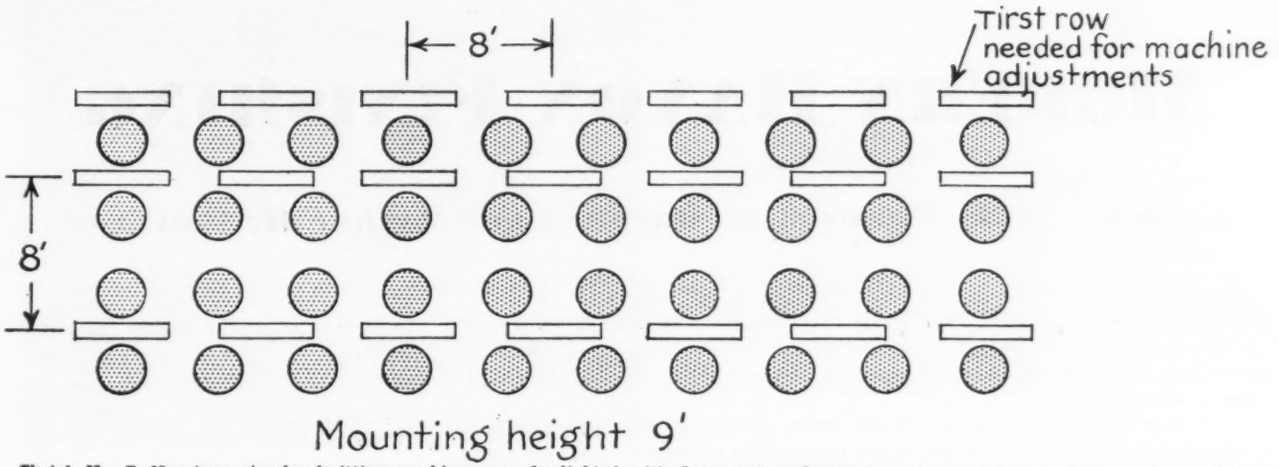
Sketch No. 4. Rayon spinning frames can be lighted with fluorescent reflectors on 10-foot centers down the row. Because of the height of such machines, more light must be generated than for rayon weaving. Continuous rows give more uniform illumination and reduced wiring costs.



Sketch No. 5. Spinning frames for white cotton require less light than for rayon spinning. The units can be spaced 10 feet apart over the aisle between each pair of frame rows as shown. The mounting height should be about 10 feet 6 inches so that light will get down between the frames.



Sketch No. 6. Colored-cotton spinning frames need more light than white cotton frames, but less than rayon. The units might be spaced 15 feet apart and staggered in alternate aisles. The small sketch at upper right, showing an end view, applies to both Sketch No. 6 and Sketch No. 5.



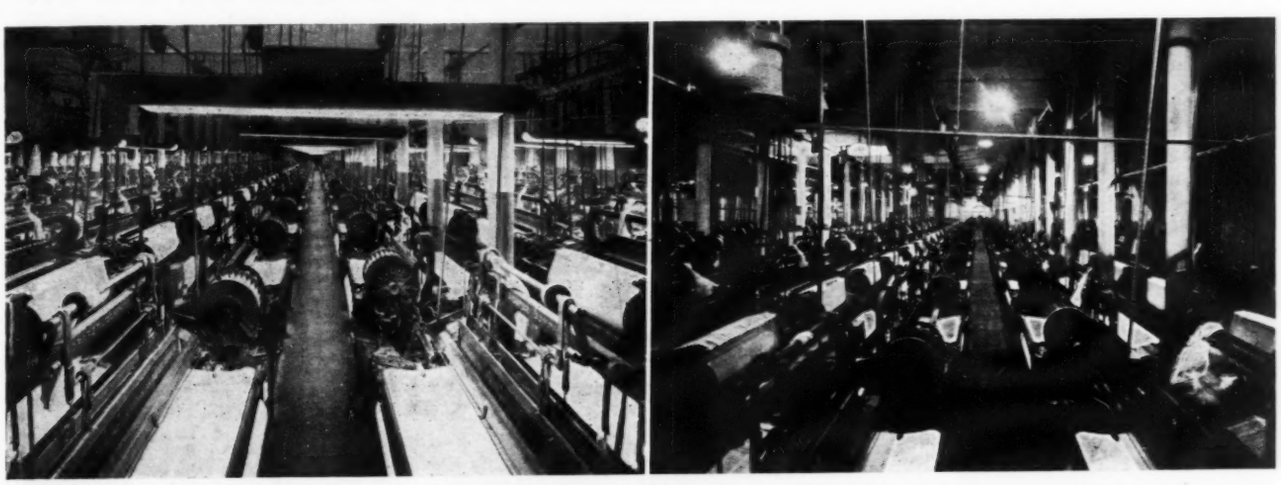
Sketch No. 7. New-type circular knitting machines may be lighted with fluorescent reflectors on 8-foot centers as shown or by continuous rows of units. The spacing can be increased to 10 feet for old-type machines. The reflectors should be about 9 feet high.

around 40. All other conditions were unchanged. On another type of motor fabric produced in the same mill the weaving efficiency increased from 83 to 87.7 per cent with 25 per cent lower mending costs.

In these busy times it will be extremely easy for the mill manager to overlook the matter of lighting-system maintenance. But it is not enough to install a good lighting system and then forget about it. For no matter how carefully the installation is designed with respect to machine location, uniformity of illumination, elimination of confusing shadows and all the other lighting quantity and quality considerations, it must be adequately maintained if best results are to be secured. Experience shows that where maintenance is neglected, the footcandle level may drop as much as 50 per cent. This means only half as much light for the same wattage and poorer seeing conditions.

Only two things are involved in keeping a lighting system at its maximum practical efficiency: (1) promptly replacing burned-out or blinking lamps and (2) cleaning lamps and reflectors at regular intervals. The first item can be taken care of by having employees report outages to the foreman or maintenance department so that prompt replacements can be made. If the fluorescent reflectors are rather inaccessible, starters such as now available will be a good investment by p r e s e r v i n g the starter element when the lamp reaches its point of normal failure and starts to blink in the customary manner.

An appropriate cleaning schedule can best be determined for actual mill conditions by making footcandle surveys, say once a month, and when the illumination level has dropped to two-thirds of the initial value, the lamps and fixtures should be cleaned. Thorough washing on the floor is heartily recommended where possible—such a procedure is almost always superior to swabbing out the reflector with a damp cloth from a step ladder. This interval established by the initial monthly surveys can then be followed in the future. In many cases it actually proves economical to replace old lamps which have operated longer than their rated life even before they have failed. This is true whenever the cost of electric energy for a given amount of light exceeds the average cost of light produced up to that time, the latter cost including both lamps and energy.



Left, a view of the recent fluorescent lighting system installed at Mills Mill, Greenville, S. C. The units are mounted on 8-foot centers in the weaving alley, and the resulting illumination level is about 40 footcandles on the woven cloth and essential parts of the loom. 20 to 25 footcandles are provided in the beam alley. Right, by contrast, the former lighting installation at this mill—a 200-watt RLM reflector for every four looms . . .

MODERN RAYON FINISHING

Article 3 **By Kenneth H. Barnard and Arthur R. Wachter**

THIS, THE third in a series, continues the discussion of machinery used in the dyeing and finishing of rayons, begun in the second section in the May issue, and also covers the important subject of the chemicals used in these processes.

The first installment, in the April issue, gave a general discussion of dyeing and finishing filament and spun rayon. The second section, on equipment, covered the equipment in the preliminary scouring and dyeing, or wet processing. The present installment covers dry processing—framing, calendering and finishing—as well as discussing the chemicals used in all the processing. References to capacity are based on a plant to handle mixed rayon fabrics running two-thirds or three-quarters of a million yards a week, 40 hours, three-shifts, and a complete floor plan for the plant was given in the May installment.

Beginning with Article 4 next month, the authors will take up specific rayon constructions and discuss their finishing in detail. . . . . .

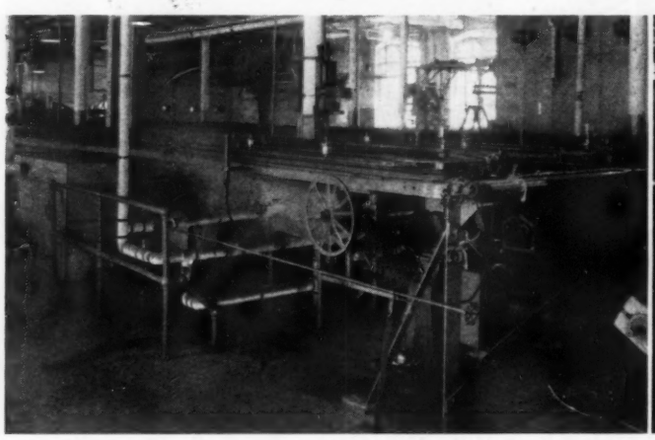
Finishing Machinery

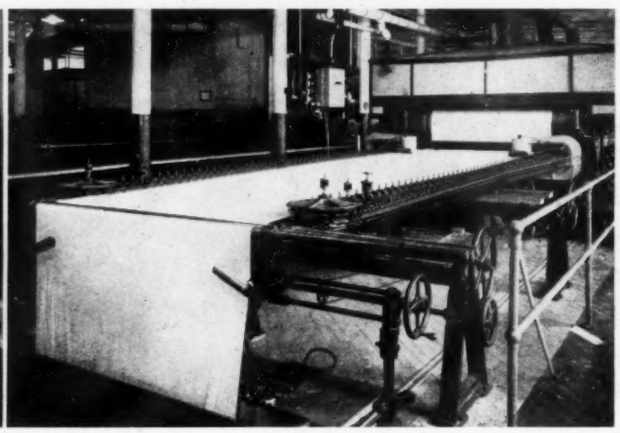
IN FINISHING women's wear and underwear fabrics, either softeners, synthetic resins or delustering agents are used. This means that a mangle ahead of a dryer must be available. Almost any two-roll rubber finishing mangle will do, providing it is at least 46 inches wide, but it should be equipped with Foxwell guides for the feed-in, and the cloth coming out of the mangle wet should be fed into the dryer by an endless belt or net conveyor in order to adjust any tension. The dryer will probably be a two-string type, as it is not much more expensive to buy a two-string machine than a single string machine and can be either the loop or Airlay type.

After drying, the cloth is framed, but as this framing is merely a dry setting of the cloth after steaming, a 40-foot frame will give a production speed of 140 yards per minute, which is ample. Two frames are necessary for each dryer and should be equipped with automatic thermostatic control. (See Fig. 10.)

For tentering checks or plaids where the cloth must be printed exactly in line with the threads, the photoelectric control straightening tenter is of use. (See Fig. 11.) It is obvious that if the pattern is not printed in line with the threads, it will appear badly distorted when the goods are shipped to the cutter-up, and complaints will follow. This particular device counts the number of filling threads passing under the control on each selvage and so adjusts the speed of the machine that exactly the same number of threads pass at any particular instant of time, thus keeping them absolutely parallel. Of course, in engraving cross-over designs in which there are horizontal stripes or bars, the engraver has to put this on the copper roll at a slight bias; otherwise, the doctor blade in the printing machine would drop into it instead of passing over it. This angle is so slight, however, that it is not noticeable unless it is magnified by the cloth skewing in the same direction. With irregular patterns, the usual floral designs, polka dots, etc., this extra precaution is not essential, but where handkerchiefs are printed which are torn along the threads, it becomes more vital than ever to have straight cloth and accurate printing.

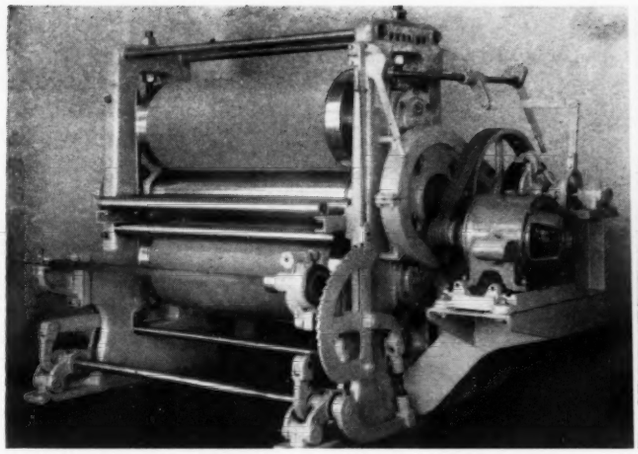
While it is not absolutely necessary to decatize all women's wear finishes, there is no doubt that the hand is improved by so

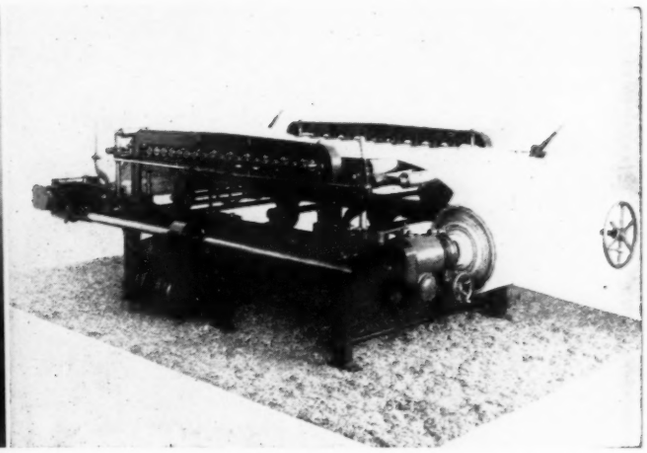




Courtesy Winsor and Jerauld Co. *Courtesy General Electric Company*

Left, Fig. 10, a silk tenter frame. Right, Fig. 11, a photoelectric weft-straightening control with phototube amplifiers, applied to cloth tenter . . . . . .





Courtesy B. F. Perkins & Son, Inc. *Courtesy Van Vlaanderen Machine Company*

Left, Fig. 12, a three-roll silk calender. Right, Fig. 13, a button-breaker.

doing. The decatizer should have as high a speed as possible, with good exhausting capacity. This latter point is particularly vital, as it is important to get the steam out of the machine so that the blanket won't get wet and give stains. Stained cloth not only means refinishing, but it may cause a trip back to the dyehouse for topping the shade. Two decatizers will be required for the production indicated.

If any satins are run, a Triune range is required. This consists of a mangle, a frame and a Palmer, all connected in series.

The final step in finishing is the calendering operation, and silk calenders consist of two paper rolls with a steel bowl between them in the center. (See Fig. 12.) No heat is required and no pressure other than that obtained by a few weights. A speed of 60 to 120 yards is obtainable and as the usual women's wear and underwear fabrics do not ordinarily require calendering, one machine is enough. It should be noted, however, that satins must be calendered in order to get a satisfactory finish.

Turning back now to the finishing of men's wear, we find that the introduction of any finish requires a much heavier mangle for this heavier cloth. As the most popular finishes make use of synthetic resins, a hydraulic mangle is indicated. This generally has two rubber rolls with a steel one in the center, in order to get maximum penetration and evenness. Foxwell guides are installed both ahead of the mangle and ahead of the frame to which it is connected. On account of the weight of the cloth, a 90-foot enclosed frame is necessary and this should be equipped with air heating ducts both top and bottom.

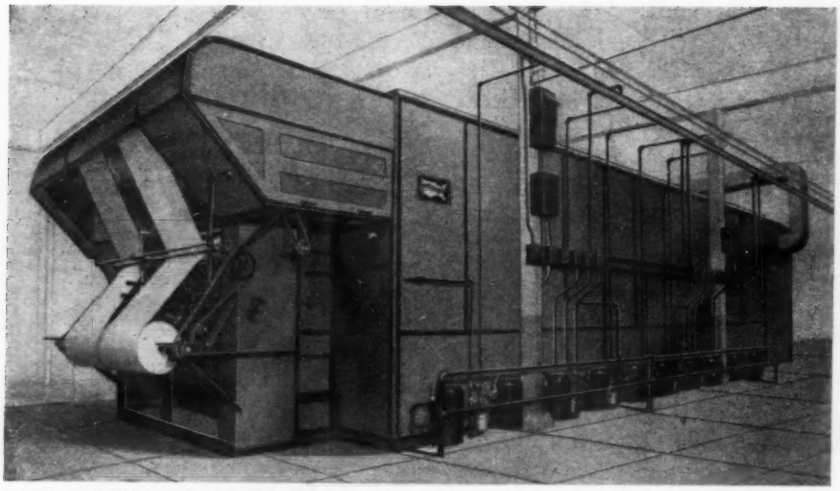
For cotton and spun rayon mixes, as in men's slacks, it is possible to use casein in the finishing material, as the only requirement is added body. However, the use of the more modern methacrylate resins is increasing on this type of goods and for impregnating them, an ordinary mangle is sufficient. This should be connected ahead of the second frame.

While on the subject of frames, a little point in the take-up of the dry cloth might be mentioned through the use of constant torque motors. Winders are now being built which permit absolutely uniform tension in winding regardless of the diameter of the roll. In many types of goods, this is highly desirable and as the tension can be adjusted through rheostats, a very excellent winding job results.

Ninety per cent of all men's wear is decatized and most of it is calendered. The machines previously mentioned are satisfactory for these heavy goods. If a mellow hand is wanted, the goods are decatized first and then calendered, but if heavy body is desired, it is better to calender first and then decatize.

In the folding room, a superior inspection table can be made by equipping the four legs of the table with casters and mounting it on a vertical shaft in the middle, so that the table can be rotated to get the best light. A further adjustment for light can be made by equipping the table with a tilting top so that the cloth, while it is wound from one roll to another, can be inspected under ideal light conditions. This is very important on rayon fabrics, as defects which might pass under one set of light conditions come up very prominently if viewed at a different angle. The drive for the winding arrangement should be made so that it can be reversed. In this way, a spot or stain which might pass through the machine can be brought back for further inspection. This particular type of inspection table is a homemade affair, but the idea is well worth copying.

Tubing machines are generally made so that the cloth is horizontal, but greater ease in handling will be effected if the machine is arranged vertically with the incoming cloth on the bottom roll and the final winding done at the top. These are much easier to handle, and this again is a homemade affair and not regularly on the market. Other machines which have not been mentioned so far are the button breaker, (see Fig. 13), and embossing calenders. These embossing calenders, which were heavy and expensive machines, are now practically extinct, as there has been no demand in the last three or four years for the 2x2, 4x4, or 6x6 crepes. The action of these embossing calenders was not to give a crepe themselves, but merely to set crepe wave lengths and give uniformity. It is obvious that in highly twist-



Courtesy, National Drying Machine Co.

Fig. 14, a loop-type dryer, described in May installment, in which sticks are equipped with gears, so that in travelling forward through the dryer, they are also slowly rotated . . . . . .

ed yarn, running 35 turns per inch, the twist in any particular inch will not be uniform, as the high twist tends to run to the weak portions of the yarn. However, if this uneven yarn is run through an embossing calender, the twist is caught and held where the calender pinches the yarn and this results in a much more uniform crepe than without it. The effect was discovered years ago by the National Silk Dyeing Company, who were in difficulty with their crepes for lack of uniformity and found that by running them through a moire calender, they got better results and, on the basis of this experience, they built these special embossing calenders.

Chemicals in Rayon Finishing

As rayon itself is a test-tube baby, its present state of health and its future, as well as its past, are all wrapped up in chemical raw materials. Viscose yarn, which leads all the rest in volume, is generally made from cotton linters; although wood pulp, selected for its high alpha cellulose content, may be used. To produce either raw stock requires a caustic boil for the removal of waxes, pectin, etc., and a bleach with chlorine to whiten the natural coloring matter. But once in the rayon plant, these chemicals, and others too, are again used in tank-car quantities. For instance to produce one pound of viscose rayon requires 1.8 pounds sulphuric acid; 1½ pounds of caustic soda; ⅓ pound of carbon disulphide; ½ pound of corn sugar and 0.4 pound of chlorine, titanium dioxide and other chemicals combined. Also 150 gallons of water. There has been some talk recently of rationing caustic soda and, of course, the supply of chlorine is very definitely curtailed due to its emergency uses in defense industries and by the Chemical Warfare Service. How the rayon industry will fare if the chemical food on which it feeds is curtailed is beyond the writers' scope, but at least this indicates how closely industry and war are inter-connected through chemical bonds. However, no doubt some form of allocation will be worked out to keep production at the present levels, particularly with the elimination of silk.

Jumping now to the finishing plant, since the spinning and weaving of rayon yarn takes very little in chemicals, we find dozens of materials that may be used, but in general, these can be divided into two classes; those which give added body or bulk and those which give added softness or drape. In the first class, the natural gums and waxes and softeners, which were the mainstay of the cotton finisher, are not satisfactory for rayon finishing. A starch finish is definitely not wanted and while some gum arabic, gum tragacanth and starch dextrines have been used, they have not been popular because they lack life on rayon and because the current trend is towards finishes that display some permanency towards washing and dry cleaning. The majority of rayon textiles go into women's wear and as the "handle" of goods is of universal interest to a woman buyer, too much emphasis cannot be placed on the finishing of these fabrics. Furthermore, between the growth of women's co-operative and consumer clubs, and the expansion of home economics courses and university extension groups, increasing interest is being shown in factual labelling and the service characteristics of the clothes worn. This means a woman's first question before buying is, How well will this dress wash or dry clean? And this little question is the one which gives the rayon finisher the greatest concern.

The popular materials for adding bulk or body to rayons are the polymer acrylic acid esters. These aqueous dispersions of acrylate resins are no longer novelties and they have consistently shown their value and worth in the greater uniformity of results and in the new markets which they open up with their new and unique fabric finishes. These resins usually are clear and colorless; non-yellowing with age, odorless. They are light fast and wash fast. They are insoluble in water, soap solutions, naphtha, and other petroleum hydrocarbons. They do not absorb chlorine. There is a large range of choice in finished results, and you can get just about any handle desired: hard, tough, flexible, soft, waxy and elastic. These acrylate resins are sometimes dispersed as an emulsion in an organic solvent which aids penetration into the yarn. On drying, the resin is firmly fixed in the fabric. Although these cost 20 to 30 cents per pound for around 30 per cent solids content, a little goes a long ways and the cost of the finish per yard may be no more than if old-fashioned natural gums were used.

Another popular type of bulking finish, with binding or stabilizing properties as well, is the polymerized urea formaldehyde resin variety. Of course, the unpolymerized resins, which will be discussed in a minute, are clear water white limpid solutions, but these now under discussion are viscous solutions and the polymerization

may even be carried so far that an emulsion of the insoluble resin results. These resins are cheaper —from 10 to 20 cents per pound for solid contents of 40 per cent— than the acrylates, but are used in larger amounts, say from 1 to 5 per cent on the weight of the fabric, so that their net cost per yard is no lower.

Probably the largest single finish used for rayons either on a volume or cost basis is the Tootal Broadhurst and Lee anti-crease process. To a small finisher, the proper sort of unpolymerized urea formaldehyde can be purchased ready for use as a dry water soluble powder. A catalyst is added to this and the solution made up to give a pick up of 5-20 per cent solids content. The details for the application of this process, the precautions to be observed and some notes on the legal technicalities connected with it, will be discussed later under "New Finishes", as the present article merely deals with the chemicals involved.

To those finishers who use urea formaldehyde in large quantities, the possibility of making their own urea formaldehyde resins will be of interest. Of course, some equipment is required— a small steam-heated reflux still (preferably of stainless steel) and enough chemical supervision to run it. The advantage to be gained is that of lower cost. A very satisfactory resin can be made by neutralizing 60 pounds of ordinary 37 per cent formaldehyde with 10-deg. Baume caustic soda to a pH of 7.0 and mixing this with 30 pounds of pure crystallized urea and then adding 2 pounds and 10 grams of ammonia (specific gravity 0.90). The whole is quickly brought to a boil in the reflux still and boiled exactly one minute, then dropped into a cooling tank and diluted with water to 20 per cent solids or whatever concentration is required. Before padding the cloth, the catalyst is added consisting of 1.5 per cent ammonium dihydrogen phosphate. It is also well to add a wetting-out agent, usually a long chain sulphonated alcohol. The only real difficulty in making one's own resins today is the very practical one of procuring any formaldehyde.

The other class of chemicals needed for rayon finishing are the so-called softeners.

Rayon finishing has given quite a fillip to the cationic softener business, as these materials are ideally suited for the purpose. They work in small amounts, they are free from any objection of odor or greasiness and they actually attach themselves to the cellulose molecule much in the manner of a dyestuff, so that they exhibit some permanency towards washing. To be sure, they have defects, too. Many of them affect the light fastness of certain direct and D and D colors adversely. They do not all act the same way nor to the same degree. However, the only safe procedure is to try out the particular "poison" you buy with the colors you use.

Chemically, these materials are of quartenary ammonium salts, often the halides. A variety of alkyl chains may be attached to either the original amine or fatty acid from which they are made. Starting at prices of 60 to 75 cents, they are now down to half this figure for materials which probably contain 50 per cent of active material.

The other type of softeners used extensively on rayons are the older long chain alcohol sulfates. These are excellent and have all the desirable qualities wanted except that they have no permanence to washing. They are sold by several suppliers and cost from 20 to 40 cents per pound. Used in relatively small amounts, they are effective in producing a soft pleasing hand and excellent draping qualities. In this connection, there has been considerable work done in the last two years in developing methods and machines for measuring drape and we have the Drapemeter developed by Professor E. R. Schwarz of M.I.T., as the official instrument of the AATCC, and the Planoflex from the Bureau of Standards by Dr. E. C. Dreby, III, while working under the auspices of the ASTM. Both instruments permit numerical evaluation of that elusive something in textiles which we call "hand".

(In Article 4, to appear next month, the authors will take up a series of popular rayon fabric constructions and discuss their dyeing and finishing in detail. The subject to be covered next month is cuprammonium sheers.—The Editor.)

Connor Succeeds Durham at Foster Machine Company

Edward C. Connor has been made sales manager of the Foster Machine Company, Westfield, Mass., effective June 1. He succeeds Webb Durham, who has resigned to become associated with Burlington Mills Corp., Greensboro, N. C., in an executive capacity. Mr. Connor has represented Foster in the South for several years. He has been in charge of the Charlotte (N. C.) office and is widely known in textile circles. He is the son of T. E. Connor, who was for many years sales manager and is now vice-president of the company.

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Booklet on Conservation of Rubber Belting

B. F. Goodrich Co., Akron, Ohio, has just issued a volume "Care and Maintenance of Conveyor and Elevator Belting". Consisting of 24 pages, the booklet is packed with vitally important instructions on the care and maintenance of belting, as well as chapters containing a wide range of belt data, valuable when considering installation or repair problems. Entirely new in the volume is a three-page chapter on "Conveyor Belt Design" which includes engineering tables and formulas to assist in making calculations for belt requirements.

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Testing Company Opens South American Branch

United States Testing Company, Inc., Hoboken, N. J., has sent representatives to Brazil to handle the inspecting and testing, at the source, of large quantities of materials purchased by concerns in the United States. A. O. Silva, for the past ten years assistant manager of the company's Chicago branch, is in charge of the company's activities in South American with headquarters in Sao Paulo, Brazil.

With the cut-off of many raw materials such as burlap, sisal, coconut oil and others, more and more manufacturers in the United States are looking to South America for replacements. The representatives of the United States Testing Company will devote their time for the present to the immediate problems of investigating and standardizing various Brazilian products for adaptation to the market needs of this country.

The Requirements of a Loom Motor *(Continued)*

(Editor's Note: This is a further installment of a discussion on the proper type of motor for looms. It began with a highly technical article, "Loom Motor Research Moves into the Weave Room", by E. S. Lammers and C. G. Veinott, engineers of the Westinghouse Electric & Manufacturing Company, on page 59 of the November 1941 issue of "Cotton". It was a detailed engineering report on tests made, with oscillographic instruments, to determine the special demands made upon a loom motor.

(A practical mill engineer sent us a comment on that article, and we published his letter on page 61 of the March 1942 issue. The appended letter from Messrs. Lammers and Veinott discusses the comments of this practical mill engineer, and gives, in simple, non-technical language, further observations on the subject.

(Copies of the two previous articles will be supplied upon request to any reader who missed them and wishes to have the file complete.)

EDITOR COTTON:

The comments by a practical mill engineer [page 61, March COTTON] on our article on Loom Motor Research [page 59, November COTTON] were constructive and helpful; they were much appreciated by the authors, who feel that the loom is so important a machine to the textile industry that a further explanation of some of the principles involved in the design and application of motors to drive them may be of interest.

One might well say that in speed there is energy; that is, any moving object has stored in it energy due to its motion. This sort of energy is known technically as "kinetic energy". To put an object in motion requires the expenditure of a certain amount of energy, exclusive of the energy required to overcome friction. For example, an automobile may have an engine capable of driving it 100 miles per hour; at a speed of 30 m.p.h. on level ground, the throttle is scarcely open and only a small portion of the total potential power of the engine is utilized; however, if the throttle is suddenly jammed to the floor board, the full potential power of the engine available at that speed is suddenly called into play, but the speed does not jump instantly to 100 m.p.h., though the speed starts immediately to increase. The excess power of the engine is being used to accelerate the car and this energy is being stored in the energy of motion, or kinetic energy.

If a body is dropped from a height and allowed to fall freely, it picks up speed and kinetic energy; the kinetic energy a freely falling body has is equal to the amount of energy that would have to be expended to restore the body to its original position before the fall. For example, if a body fell 13 feet in a free fall, it would acquire a velocity of 20 m.p.h. Hence the energy that has to be used to accelerate a car to 20 m.p.h. is the same amount of energy that would have to be expended to lift the car a vertical distance of 13 feet. (Friction and windage losses are not included in our discussion.) At other speeds, the corresponding heights are given in the following table:

20 m.p.h.	13 ft.
40 m.p.h.	54 ft.
60 m.p.h.	120 ft.
80 m.p.h.	214 ft.
100 m.p.h.	334 ft.

Thus, the kinetic energy in a moving body can be expressed in terms of height in feet which thus becomes a direct measure of the stored energy. An insurance company, to point out the hazards of fast driving, once issued a booklet pointing out that if an automobile travelling at 60 m.p.h. crashed into a solid wall, it was equivalent to dropping a distance of 120 feet, or 12 stories onto a solid pavement.

Entirely aside from whatever this point may teach with respect to highway safety, it does bring up the fact that to stop a fast-moving body requires that energy be absorbed from the body. If a car fell 120 feet, it would acquire a velocity of 60 m.p.h. and the kinetic energy in it is exactly enough to raise the car 120 feet. If the car is moving on level ground and the clutch thrown out, the car will travel for a long distance, coming to rest only after all the kinetic energy is expended, slowly overcoming air resistance, tire friction, etc. If the brakes are jammed on, a considerable amount of energy is expended in the brakes, and the car is brought to rest much more quickly. If the car crashes into an immovable wall, it comes to rest instantly —with wholly disastrous results to the car and its occupants.

The main point of the preceding discussion is that it is necessary to put kinetic energy into a body to set it into motion, and the same amount of kinetic energy has to be taken out of that body to bring it to rest; moreover, the amount of this energy can be expressed in terms of feet height. This idea is helpful to an understanding of some of the features of operation of a loom.

The lay of a loom is usually heavy. At front and back centers, the lay is at rest momentarily. At top and bottom centers, the lay is moving rapidly. Just as it takes energy to put a car in motion, so does it take energy to put the lay in motion. This energy to accelerate the lay is stored in the motion of the lay and has to be absorbed when it is brought to rest. Thus, a certain amount of kinetic energy is put into and again taken out of the lay with each half-turn of the crank, or twice for each pick. Just as the kinetic energy stored in a moving automobile can be expressed in terms of height, so can the energy stored in the lay.

Assume a loom being driven at 190 picks per minute; the effective center of the mass of the lay will be somewhat below the top of the reed cap; assume, however, that this center of mass moves a total distance of 8 inches with each half-turn of the crank. On the basis of these assumptions, the amount of kinetic energy stored in the lay at either top center or bottom center is the same amount of energy that would be required to lift the lay a vertical distance of 8¼ inches. Thus, for each pick, the motor has to supply sufficient energy to raise

the lay a vertical distance of 16½ inches; the same energy has to be absorbed for each pick. Since this occurs 190 times a minute, the sum total energy used merely to accelerate the lay every minute is the same amount of energy that would be required to raise the entire weight of the lay a vertical distance of 261 feet, however heavy the lay might be. Likewise, every minute, an amount of energy has to be absorbed, corresponding to breaking the fall of the lay after a straight vertical drop of 261 feet. This illustration may make it easier to visualize how much energy has to be supplied and be absorbed from the lay, just to accelerate it and later bring it to rest.

The energy represented by the 261-foot rise and fall of the lay includes none of the frictional losses of the loom, nor the energy of any of the other motions.

An absorbing question is—can the energy used in stopping the lay, that is, the energy represented by the 261-foot free fall each minute, be utilized in driving the loom, or is it all wasted? The answer is that it can and must be for efficient operation. Just as a body moving in a straight line can store kinetic energy, so can a rotating body. In a motor-driven loom, practically all of the stored mechanical energy is stored as kinetic energy of the rotor of the motor. The amount of energy that can be stored in any given rotor is proportional to the square of the rotational speed; to increase the rotational speed, it is necessary to add kinetic energy to the rotating mass. Similarly, to slow down or stop a rotating mass, it is necessary to absorb energy from the rotating mass. Thus, a flywheel can act as a reservoir of energy, either giving up or absorbing energy as the speed is reduced or increased.

In a motor-driven loom, the rotor does act as a reservoir of energy; between front and top centers the loom makes a heavy demand of power to accelerate the lay, and this sudden power demand is supplied from the stored kinetic energy of the rotor at the expense of a slight reduction in speed of the latter. From top to back center, the lay gives up energy which is fed into the rotor, raising the speed of the latter. These periodic changes in speed are shown in the oscillograms. (See "Loom Motor Research Moves into the Weave Room," COTTON, Nov., 1941.)

The energy change represented by a small change in speed is roughly proportional to the difference in speeds multiplied by the WR^2. Therefore it follows that with a large WR^2, the change in speed is less than with a light flywheel. Thus, a heavy flywheel makes the loom run at a more uniform speed and very frequently reduces the power to drive the loom by smoothing out the peaks in power demand.

The practical mill engineer's analogy to a clutch in his March issue discussion is exact if we read his definition of clutch carefully; "the clutch slips a little more at each increase of power demand." This is not like an ordinary friction clutch which either holds tightly or slips; once the friction clutch starts slipping, the force transmitted is the same whether the clutch slips a lot or but little, since the coefficient of friction between the clutch surfaces varies but little for different rates of slip, though the coefficient is less when the clutch is slipping than when it is holding. A polyphase induction motor does act like a clutch—in a sense—but it differs from the ordinary friction clutch in that the more slip, the more torque or more force transmitted by the "clutch". In fact, the torque is proportional to the slip when the slip is small.

Thus, if the speed of the motor is reduced to start the lay, or for any other reason, the motor draws more power from the line and develops more torque. This increased torque helps carry the additional load, and after the additional load is removed, accelerates the rotor, restoring to it the kinetic energy lost. When the lay is being stopped—as between front and back centers—it gives up energy which goes into accelerating the rotor and driving the loom motions. In a number of cases it was found that the loom actually overdrove the motor above synchronous speed, causing it to act like a brake, like the engine of an automobile acting as a brake on a down grade. In such cases, power is actually returned to the line (regeneration).

The process of regeneration, or returning power to the line during a pick stroke, might seem economical; actually it never is, for whatever power is returned to the line has to come back again from it. Our tests showed that when this occurred, economy was served by eliminating the regeneration, either by the use of more flywheel effect or by use of a rotor with a higher full-load slip. Even after the electrical regeneration was eliminated, there was always an interchange of power between the lay and the rotor. Thus, when the regeneration was eliminated, the sole reservoir of power was the rotor of the motor, which had to have sufficient flywheel effect, or WR^2.

The terms "low slip" and "high slip" are merely relative, but worthy of explanation. On a low-slip motor, a large change in torque or load causes a relatively small change in speed, whereas on a high-slip motor, the same load change would cause a much greater speed change. From this, it might be supposed that if a high-slip motor were used to drive a loom, the speed of the loom would change more during a pick cycle than if a low slip motor were used since the low slip motor would have greater changes in input and torque. While the authors really expected that this would be the case, the evidence of more than one hundred oscillograms was to the contrary. The only conclusion possible, then, was that the changes in speed during a pick cycle were determined by the inertia effects and that the differences in electrical input have little influence upon the speed changes.

In one case, as reported in our original article, it was found that the use of a motor with a higher slip drove the loom just as steadily, but with smaller changes in input during a pick cycle, and with a net decrease in total power input of as much as 8 per cent

(*Continued on page* 73)

A Little More Production

By A. K. Landau
Saco-Lowell Shops

TO TAKE millions of cotton fibers —of different lengths, with different spirality, different diameter and cross-section — separate them, clean them, arrange them in orderly fashion, and then spin them into a thread with a definite unit weight, and possessing within narrow limits definite physical characteristics, is indeed an art.

Art, a much-used word, has many definitions. It has been said that definitions are dangerous, yet, to understand the application of the word, a definition must be used, and one of the best definitions of Art, in the sense which we are using it is this: Art is the systematic application of knowledge and skill, acquired by study, observation, and experience, in effecting a desired object. Such is the definition of art as created by Commander Frost of the U. S. N.

The desired objective in cotton spinning is to make yarn as good, as economically, and as efficiently as can be done with the equipment and facilities at our command; and if this objective is well understood, then our thoughts are in the proper channel. The most experienced superintendent, or overseer, or technician, is after all but a mortal and admits, if honest, that some time in his career, he has been caught by some unexpected contingency which has taxed his ingenuity and has brought into action the resourcefulness of his training and experience. The ability to react quickly and effectively to these unexpected contingencies, to analyze quickly the effects they will produce, and to formulate promptly plans for their handling, are the distinctive marks of the top-notch mill executives, regardless of their place in the organizations.

In these days of war, with its unexpected crises and uncertainties, the operating executives of our textile plants must first of all realize their responsibilities and the extent to which our national fate depends upon the successful completion of their assigned tasks. That the task assigned is a real one is indeed self-evident, since the industry is called upon to furnish products, many of which are as essential to the war effort as the products of the ordnance plants. As an example, there are gas masks, parachutes, powder bags, cartridge belts, haversacks, not to mention the no less essential clothing for the combat units. Then there are the tires and fan belts, the pontoon boats, and many other articles made from the industrial fabrics in which this country excels.

Now in ordinary times, when life was on a more leisurely tempo, missing a shipping date by a day or a week or even months had no real consequences, but today when our very national welfare depends on having everything "on hand" as planned and "according to schedule", delay in delivery may prove disastrous.

Do Proper Planning

The staff of the mill should, therefore, have in front of them a schedule board, or planning, on which are listed in detail all government orders, and this board should show in addition to the type of fabric being ordered, the equipment assigned to assure production, and finally, the rate at which the goods are being delivered. This record can be simple, or it can be more elaborate, but it should be in the care of a member of the superintendent's staff who should keep it up-to-date by posting the daily production, and other developments effecting progress of the order. By a scrutiny of the facts as recorded, bottle-necks and delays will be readily apparent, sometimes even in their formative days, thus giving the operating staff time to take corrective measures.

For example, on the portion of the record showing the looms, the run-out of the warps may be predicted and preparations made for changing the warpers or slashers in sufficient time to have warps available. Or, if the filling frames are running behind the looms, the impending disaster can be quickly caught and steps taken to run the frames overtime, or to change over the necessary units to supply the deficiency. In the same manner, the progress of the stock through the mill can be under observation at all times and weak spots detected and strengthened before there has been a loss of production.

Again, in these times, management can render a real service by instituting a strict control of all the materials used in manufacture, by tightening any slackness in record-keeping, in control of stock and supplies, and even the field of personnel.

The importance of accurate and up-to-the-minute records of supplies on hand with an analysis of the rate of their consumption will prove invaluable. If not at this very moment, it will not be long before it will be impossible for the purchasing agent to wire his supplier for "24 twist gears" or "25,000 steel heddles" or "200 reeds", to be shipped "today by express". Lack of reserve and stock and the ever-present priority which will govern shipments will prevent this service to which mills have been accustomed in their peace time operations.

If there are any skeptics, let them today try and obtain quick shipments of ball bearings for pickers, or steel heddles for looms. We understand that even shuttles are getting "tight", as the makers are turning out large quantities of gun stocks.

Management itself must get out of its peacetime tempo and be on the alert to make use of every bit of technological science and to employ every better method or procedure to get the utmost in satisfactory production from each unit of equipment in the mill. A little gained here and there will, in weeks or months, multiplied by the large aggregate of looms or spindles, attain a sizable amount. This means that the loss of pro-

duction originating by loss of speed through dirty, slipping belts, or low voltage and low frequency on the power circuit, or waste of time doffing, or waiting for filling, or lack of roving, and "no warps", should call for a heaping of coals on some one's head—such losses are inexcusable.

Controlling Waste

In a like manner, there should be a similar control showing the production of waste, and this record should be broken down so as to show the portion of the recoverable waste; that is, the amount of sliver stock, re-worked roving and spinning clearer waste returned to the stock in process. And, a careful scrutiny, supported by fiber sortings and fiber arrays, should be made from time to time to be sure that valuable spinnable fibers are not lost; and do not forget that this applies in equal force to the combers, where loss of long fiber, on account of improper timing and settings, can develop into a serious leak.

Now, more than ever, it is important to reduce the breakage of quills and bobbins, the spoilage of roll cots, the unnecessary wear of shuttles—since all of these essentials are becoming a problem as far as replacement is concerned. Weave room overseers can save plenty of money and eliminate the production of warp waste by seeing that the slasher tenders start the warps in a manner to assure weaving out of the last possible yard. Most mills inspected of late seem to be very careless about this operating detail.

Management can increase the productive capacity of their mills by using, to the ultimate degree, the built-in productive capacity of their equipment, some of which, in many mills, is latent on account of certain peace-time operating conditions. For example, the modern one-process picker, operating on Strict Low Middling cotton, prepared by an adequate opening and cleaning line, is generally set to produce about 325 to 350 pounds per hour. Under impact of necessity, the rate can be stepped up to 375 pounds per hour.

Cards and drawing are generally speeded too high as it is and it is doubtful if much added benefit can be obtained by speeding up in these sections. However, drawing can be run with front roll speeds as high as 110 feet per minute, in contrast to the peace-time upper limit of 100 feet.

Sometimes an additional quantity of sliver can be obtained by raising the weight of the sliver by two or three grains per yard, a step which will perhaps result in longer draft at the long draft roving frame. These modern drafting assemblies, with proper weighting and roll setting, will draft effectively, on carded stock, up to 25 and the draft used should be approximately of this order, if at all possible. At the same time, the roving should be regulated to operate the spinning draft at the full capacity of the assembly, which is "a draft of 1 for every 1/16-inch staple length" of the stock.

Sometimes a study of these internal organizations and an exploration of the interrelations of draft, speed, weights, and roll settings may reveal modifications in existing organizations which will bring entirely worthwhile production increases.

Finally, management must not forget that two- and three-shift operations bring with them new lubrication and maintenance problems; that machinery operated continuously needs added attention and that vigilance alone will prevent incessant trouble from hot bearings, breakdowns, and time lost installing replacements. Now, more than ever, good oilers and on-the-job fixers have a chance to demonstrate their worth.

Requirements of a Loom Motor

(*Continued from page* 71)

a truly phenomenal gain. The oscillograms for this motor and loom were made a part of our original article.

The practical mill engineer suggests lightening the lay. There is no doubt in the minds of the authors, that if this were done, important economies would be effected in power consumption. He also mentions the waste of power in bouncing the shuttle out of the binders. This same idea had occurred to the operators of one of the mills in which our investigations were conducted, as he had made a device for releasing the tension of the binders while the shuttle was being thrown from the box. At his request, we made comparative measurements of power with and without this device, but the actual savings were so small, if any, that we were unable to find them.

The practical mill engineer suggested comparing loom motors on the basis of kilowatt-hours per yard of cloth. This comparison would be fair if both motors were tested on the same loom and if the loom were driven at the same speed in both cases. A number of empirical tests seem to point to the fact that the power taken by the motor varies as the square of the number of picks per minute. Thus, the faster a loom is operated, the more kilowatt-hours are required for each yard of cloth. A 10 per cent increase in operating speed of the loom would, therefore, mean an increase of 10 per cent in the kilowatt-hours per yard of cloth. Thus, any comparison in motors should be made on the basis of the same number of picks per minute.

E. S. LAMMERS
C. G. VEINOTT

Plant Collects 350,000 Pounds of Scrap Metal

In an intensive scrap conservation campaign at the East Springfield Plant of the Westinghouse Elec. & Mfg. Co., 350,000 pounds—enough metal to build more than nine 18-ton army tanks—was recently collected. A special drive sent workmen searching through their workbenches, tool chests and on factory floors for all excess materials not necessary for war production. Old dies, tools and fixtures which a survey revealed could not be used in the war program were sent to mills for reprocessing. These articles were deposited each day in large containers located at all factory gates. Proceeds from the sale of these employee contributions were turned over to the Red Cross. The directors of the drive said they would be on a permanent lookout for metals that might be used in the war program. A continuous review of all tools and fixtures is planned to determine which were of immediate value and which should be scrapped.

The Handling of Grievances

By W. M. McLaurine

Secretary-Treasurer, American Cotton Manufacturers Association

A GRIEVANCE is something real or imaginary that irritates a person. It disturbs his mental equilibrium and causes friction. Whether it is real or imagined, the result is the same. Nearly always these grievances are small irritations caused by some mental or material situation that to many may seem insignificant and immaterial. They are too often regarded as of no consequence and therefore brushed aside with indifference.

These irritations or grievances are powerful in their possibilities. They are germs of disease. They must be discovered and dealt with rapidly and effectively. They will accumulate and spread and ultimately cause serious trouble if they are not cured.

The man who is closest in the supervisory line is the one to discover and cure. The supervisory door and the intellectual door of understanding must always be kept open. The worker must feel free at all times to enter and unburden himself of his grievance, regardless of whether it is real or imaginary.

The supervisor must be an approachable and a sympathetic man. He must invite confidence, hence be able to put the worker at ease at once, regardless of whether the conferences are on the job or in the office. He must listen attentively to the complaint and let the man tell his story fully. The supervisor must discuss the situation calmly and intelligently so that all of the facts are thoroughly known by both parties.

The supervisor must carefully study the man with the grievance. There are so many individual characteristics in people that cause them to assume peculiar and eccentric attitudes. In an argument, too often heat or prejudice develops and either one is a bar to a satisfactory settlement. In a diplomatic discussion often the man with the grievance can detect his error and become satisfied. It may be that the supervisor will need to do a little face-saving for him.

Again, it may be that the grievance is real and just; the supervisor must be honest and fearless and above all diplomatic and correct the error of the cause of the grievance. Honesty is always the best policy and it works both ways. Time and patience, intelligence and sympathy are important factors in settling grievances. A grievance well settled is a powerful force in preventing others and it is a social cement that binds the units together in a fine cooperative spirit. Fairness is wonderful. No man is perfect. All men make mistakes and the supervisor will make some just as surely as the worker. The supervisor must correct his with the same grace and dignity that he expects the worker to display.

Grievances need to be handled quickly. They must not be settled on snap judgment but upon a clear-cut basis of understanding of both parties. In industry and in the army there is often a philosophy of "buck passing". This is a bad policy. A supervisor should assume more than his part of the blame when errors occur. This is a general rule to follow. There may be a few occasions when this policy should be modified. The worker should always receive the benefit of any doubt that may develop. A supervisor is really a judge and a jury. He should be a judge first and try to handle the case judiciously and then let his judicial mind pass its verdict. His verdict should be so fair that there should be no desire for appeal either to "higher ups" or outside parties.

The supervisor must be able at all times to correct the grievance to the satisfaction of the complainer. This does not mean that he must always correct the complaint as the complainer desires; it does mean that it must be settled carefully and satisfactorily. The supervisor is the key man in the causing or curing of a grievance. Grievances in a large measure are the result of bad organization and bad management.

Small grievances can grow to big ones. They can become so numerous and so large that they will influence a whole department or an entire organization.

The little things in life are the great disturbers. They are the destroyers of happiness and cooperation. One executive believes this fact so strong that he has informed all of his executives to cure every grievance at once, even if a whole department or the entire plant must be stopped. The grievance must be cured. When one thinks of those he admires most they are the people who have been most considerate in little things.

When one thinks of those he admires least they are those who have been inconsiderate in little things.

Little things will make or break any organization. It all depends upon how they are regarded. Grievances are little things, they must be cured at once or they will ultimately wreck an organization. A worker with a grievance unsettled does not make a good salesman in a public relations program.

THIS IS the eighth of a series of short articles by Mr. McLaurine, prepared especially for "Cotton", discussing various phases of public and industrial relations work and problems of textile mills.

The series is in keeping with the current, active policy of the American Cotton Manufacturers Association in this sphere.

New Mill Practices Emphasized in Discussion at Raleigh

DISCUSSION OF PRACTICAL and timely mill topics, and election of new officers, featured the meeting of the Eastern Carolina Division of the Southern Textile Association, held at the Textile School of N. C. State College, Raleigh, N. C., on Saturday morning, May 9. Due to lengthened operating schedules, and transportation restrictions, the attendance was small, but those present manifested active interest in the discussions, which developed information on a number of practical points.

D. E. Long, of Oxford (N. C.) Cotton Mills, was elected chairman of the division, succeeding George A. Gilliam, superintendent of the Sterling Cotton Mills, Franklinton, N. C., who presided at the Raleigh meeting. Virgil E. McDowell, overseer of carding, Rosemary Mfg. Co., Roanoke Rapids, N. C., who has been secretary-treasurer for the past year, was made vice-chairman; and Sidney Green, of the Eno Cotton Mills, Hillsboro, N. C., was made secretary-treasurer. A. L. Odum, of Erwin Cotton Mills Co., was added to the executive committee of the division.

A resolution of regret and sympathy in the passing of P. B. Parks, Jr., one of the past presidents of the association, and a leader of this division, was adopted.

Chairman Gilliam conducted the practical discussions, which were based on a brief set of questions. The first pertained to increasing card speeds, and asked for reports on practice in this connection. It read: "What results have you received from increasing card cylinder speed; (a) with all other speeds increased in proportion; (b) with all other speeds remaining the same; (c) what changes if any did you make in card settings?"

Results of Higher Card Speed

Interest in higher card speeds was stimulated by the recent work of George H. Dunlap, who is doing research work under the auspices of the Southern Textile Association and The Arkwrights, Inc., under a grant from The Textile Foundation, and whose first report gave the test methods and results of two mills that had increased card speeds considerably. Mr. Dunlap's report, with the detailed figures, appeared on page 95 of the April issue of COTTON.

At the Raleigh meeting, A. R. Marley, superintendent of Mill No. 1, Erwin Cotton Mills Company, Durham, N. C., made a comprehensive report on a test he has made on increased card speed. He said he followed the general outline used by Mr. Dunlap, arriving at somewhat different results on some points.

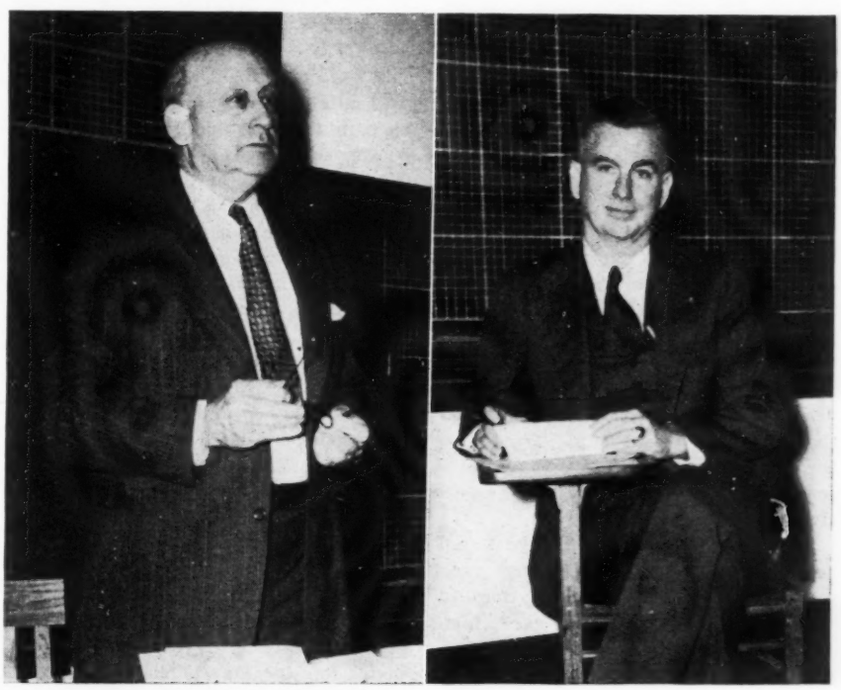
"We increased the speed in only one way," said Mr. Marley, "and that was by increasing the cylinder speed, with all other speeds going up in proportion. We went from 165 r.p.m. on the cylinder to 198; I believe Mr. Dunlap's highest speed was 196.

"We made a careful check of the waste, and made tests on charts from the sliver testing machine on drawing and card sliver, and also on the warp and filling yarn. The staple of our cotton is 1-inch, or a little better, and the grade is Middling; North and South Carolina and Georgia cotton.

"On our pickers, which are single process, the rear beater is three-blade, the middle beater three-blade and the front beater is a Kirschner. On the cards we run 58 per cent relative humidity, and the stripping schedule is 3 times in 8 hours. We run a 13.36-ounce lap into a 55-grain card sliver. Our pounds per hour at 165 r.p.m. cylinder speed on the card were 11.84; and with the 198 r.p.m. cylinder speed, 13.42.

"The cards used in the test are 1896 model, and the age of our clothing was different from that on the cards in Mr. Dunlap's report, which I believe had new clothing on them. On the cards we run at 165 r.p.m. cylinder speed the doffer clothing is 2 years old and the cylinder clothing has been on for 17 years, and on the faster speed cards, both the doffer and cylinder clothing is 17 years old.

"Our doffer speeds are 10.5 on the slow speed (165 r.p.m.) cards; and 12.75 r.p.m. on the fast (198 r.p.m.)



Left, George Gilliam, snapped as he presided at the meeting in Raleigh as chairman. Right, V. E. McDowell, who has been secretary of the Eastern Carolina Division and was elected vice-chairman at the meeting last month

Report and photos by Robert W. Philip

Three Erwin superintendents at the Raleigh meeting. Left to right: A. R. Marley, Mill No. 1; M. R. Harden, Mill No. 4; C. W. Howell, Mill No. 6.

cards. Licker-in speeds, 416 and 494 r.p.m. Comb, 1,510 and 1,935, but we tried slowing down the comb on the faster speed card, and we were able to decrease the comb speed back to 1,600 and still get the web off of the doffer satisfactorily. The front plate setting on both sets of cards is 28/1000 top, and 34/1000 bottom.

"For the 5-roll one-process drawing, with a front roll speed of 375 r.p.m. was used. The two back rolls are metallic and the three front rolls cork. The test stock was run through one process of roving, Super-draft, and making 2.60-hank roving; our spinning is long draft with cork top rolls, double creel, making 21.25s warp and 22s filling. The diameter of the ring on warp is 2-inch; filling 1 7/16-inch.

"Now, as to the results we got:

"Our total card waste, on the slow (165 r.p.m.) cards, was 6.63 per cent; and on the fast (198 r.p.m.) cards, 7.78 per cent, or 1.15 per cent more waste from the card running at the higher speed.

"As to variation in sliver, we made five charts on the sliver tester, each consisting of 18 yards, 6 from the top, 6 from the middle, and 6 from the bottom of the can. On card sliver, we had 12.39 per cent average variation on the 'slow' cards, and 11.51 per cent average variation on the 'fast' cards, with 26.29 per cent maximum variation on the 'slow' cards and 25.61 per cent maximum variation on the 'fast' cards. The average yard-to-yard variation on drawing sliver was 25.22 per cent on the 'slow' cards, and 24.24 per cent on the 'fast' cards, with maximum percentages of 38.71 and 36.75 respectively.

"On the 2.60-hank roving, we found 1.43 per cent less variation per yard on that from the 'fast' card than in the roving from the 'slow' card, testing 20 yards; and .02 per cent less maximum variation.

"On the yarn sizings, we made 64 sizings in the laboratory. On the warp, the average size from the 'slow' card was 20.84s, and the average from the 'fast' card 20.93s; filling, 21.20s from the 'slow' card and 21.19s from the 'fast' card.

"As to breaking strength, the actual breaking strength of the warp from the slow carding was 98.72 pounds, and, corrected to 21.25s, 96.81 pounds. The yarn from the fast card broke 98.23 pounds, which was 96.75 pounds corrected to 21.25s.

"On the filling, the faster carding showed just a little increase in breaking strength. From the slow cards, the breaking strength was 89.47 pounds; corrected to 22.00s, this was 86.22 pounds. The fast carding showed 90.25 pounds, which, corrected to 22.00s was 86.93 pounds.

"We also checked over the whole 64 sizings to find the variation in the yarn number. On the warp, from slow carding, we had a high and low of 22.22s and 20.00s, and exactly the same on the faster carding. On the filling, the high and low from slow carding was 24.10s and 19.42s, and from the fast carding, 22.47s and 19.61s.

"I might add that we had a difference in the running time of the lap; on the slow cards it was 3 hours and 55 minutes, and on the fast cards it was 3 hours and 15 minutes. The doff ran 60 minutes on the slow cards and 50 minutes on the fast cards."

Commenting on Mr. Marley's report, the chairman said it appeared that the main point was that of getting more work through the cards, and he asked Mr. Marley whether he made any changes in the production gear or in the settings. Mr. Marley replied that he did not change the production gear, but left it the same, simply speeding up the cylinder to 198 r.p.m. and letting all the rest of the card come up in proportion; he added that they made no change in their settings, in going to the higher speed, the settings being: Doffer to cylinder, 7; front plate, top, 28, bottom, 34; back plate, top, 17, bottom, 22; licker-in to cylinder, 7; mote knives, 10; feed plate to licker-in, 12; flats, 10; stripper comb, 22; cylinder screen, front, $\frac{5}{16}$-inch, middle, 34, back, 22; licker-in screen, $\frac{5}{16}$-inch; feed plate to feed roll, 5; and plate between the cylinder and doffer, top and bottom, 22.

Colyar S. Tatum, manager, Pilot Mills Co., Raleigh, N. C., commented on the increase of more than 1 per cent in the card waste. In a mill running 100,000 pounds a week, he said, this would be 1,000 pounds, which with cotton at 21 cents a pound, would be $210.00, and expressed the opinion that the cards could be run over-time on the week-end at regular speed at time-and-a-half labor cost, and get the additional production more economically. Mr. Marley explained that "we were already doing that, and still had to get more production, and that is why we speeded them up." He added that he did not have the facilities used by Mr. Dunlap in mounting yarn samples on blackboards, but that observations by six practical men resulted in every case but one of the yarn made with the faster carding being selected as "looking better" than that made with the cards at the conventional speed.

Answering further questions, Mr. Marley said he has had one line of 17 cards running at the higher speed for about three weeks, and has observed no harmful effects to the cards or to the clothing. As to the old clothing he has on the speeded-up cards, he commented that some of the old clothing is better than some of the new. The only difference he has noticed in the running of the cards is "a little more rattle in the coiler heads on the ones running at the higher speed."

Speeded Up for Quality

W. T. Honeycutt, overseer of carding, Sterling Cotton Mills, Franklinton, N. C., was called on by the chairman, and said, "We have all of our cards speeded up to 185 r.p.m. on the cylinder. The only test we made was to run three cards for four or five weeks to see whether we could do it or not. The breaking strength was the same, the yarn was just as good, and Mr. Gilliam decided to change the whole thing over, and we have had mighty good results with it." Mr. Gilliam added that their main reason for speeding up was to get, with the same production going through the cards, better cleaning, and "we speeded up the cleaning parts of the card and reduced the production gear two teeth, which we feel gives us the equivalent of two additional teeth of cleaning with the same amount of cotton going through." He asked Mr. Marley how his cards are driven, and Mr. Marley answered, "from motors on the drive shaft." Mr. Gilliam said they have 60 cards at Sterling, and that at the regular speed,

they were being driven by a 35-hp and a 50-hp motor, but that when they increased the speed (by about 12 per cent) up to 185 r.p.m., these two motors couldn't pull the additional load, and they had to add another 25-hp motor to the job. He added he felt he was getting a better quality yarn as a result of the better cleaning, and as to his own increased waste, Mr. Marley pointed out that it stands to reason that if more waste and foreign matter are taken out, the yarn will be cleaner.

G. E. Moore, superintendent, J. M. Odell Mfg. Co., Bynum, N. C., was called upon, and said he had speeded his cards up to 182 r.p.m. on the cylinder, and sees no difference in the product or the running of the machines. He increased the cylinder speed only and let the rest of the card increase in proportion.

A. W. Faris, overseer of spinning, Erwin Cotton Mills Co., noted that none of those reporting had included any tests as to the effects of the increased card speed on the ends down in the spinning room, indicating this is a vital thing, and implying that the results in this connection would not have shown so favorable a report if this point had been checked.

Repairing Machine Parts

The discussion moved next to methods of reclaiming or replacing broken machine parts. D. M. Benson, assistant master mechanic, Erwin Cotton Mills Co., Durham, was called upon, and cited a number of specific ways of salvaging materials in the repair of broken parts, particularly in the use of electric and acetylene welding equipment. Mr. Benson said that in the past, many mills had looked upon the shop as a necessary evil, and that normally it is difficult to make a shop pay its own way, but that in these days of scarce metals and shortages of materials, mills are realizing the possibilities of the machine shop and doing something about it. However, he said, a shop will be "dead weight" unless the men and equipment in it are kept busy, and said to accomplish this requires careful planning and routing by the heads of the production departments in order to decrease the idle man and machine time so customarily found in a mill machine shop.

T. W. Mullen, superintendent, Rosemary Mfg. Company, Roanoke Rapids, N. C., asked Mr. Benson whether he had experience with metal-spraying for building up on shafting, etc. Mr. Benson reported an experience with this process by having it done by a local shop in Durham, and said the results had not been satisfactory. But F. E. Bozeman, works manager of the repair shop of Whitin Machine Works, Charlotte, N. C., reported complete success with the metallizing process in making repairs, particularly citing spindle blades and roll arbors. He said you must prepare the metal for the spraying by roughing it up. "We put it in a lathe and take a rough cut, and then the metal is sprayed in there under 60 pounds of air pressure. It doesn't form an actual bond, but we have never had any trouble with it cracking." He said they work with the material down to extremely close tolerances, with no difficulty at all. "You get a glazed finish," he said. "It is a little darker than the rest of the metal." Mr. Harden asked Mr. Bozeman whether he had ever used the metallizing process on brass size rolls for slashers; Mr. Bozeman said they did a job of that kind for a mill down in Georgia about a year ago and have had no reports of trouble; "and if there is any trouble of any kind we usually hear from them right quick," he added.

From Jacquard Damask to Army Duck

The next question asked for experiences in changing from regular work to army duck, and requested accounts of what changes are necessary in such conversion. Mr. Mullen of Rosemary Mfg. Company said they are right now going through the process of changing a portion of a Jacquard damask mill over to army duck, and that there are plenty of difficulties in such a change. "We have been at it for about three weeks now," he said, "and I believe the biggest problems are in the handling of the yarn." He said they have taken the Jacquard heads off their Jacquard looms and added cams, and are trying to run the duck on dobby looms also. There is not much to the mechanical part of the change, as to the looms, he said. "We are weaving a single-yarn duck, 10s warp and 5s filling, 74x27, two ends working together. That is tremendously different from a 5-harness satin weave damask. The difficulty is in the running of the warp and the beat-up and the take-down motion and tension. We are getting along fairly well. We were told we would have to change the let-off, but we do not think this is necessary. We have just been getting some information from the service man of our sizing compound manufacturer as to the sizing of the yarn, but the whole thing is so different from what we are used to that we are starting right at the beginning and working out each point as we come to it. I do not think we will ever be able to make duck as efficiently as a mill that was originally set up for duck, though."

D. E. Long, of Oxford (N. C.) Cotton Mills, the new chairman of the Eastern Carolina Division . . .

M. R. Harden, superintendent, Mill No. 4, Erwin Cotton Mills Co., Durham, asked Mr. Mullen what changes he had made as to the shuttle capacity and loom let-off. Mr. Mullen said they put a drag roll on the C-4 looms, but that on his one Draper loom he believes they will get along with the friction let-off and no drag roll. He said they could not change the shuttle capacity without changing the lay, which they did not wish to do. He is putting 1½ ounces of 5s filling on the quill for a $1\frac{5}{16}$x$8\frac{3}{4}$-inch shuttle. He added that they have no humidity in this particular weave room, it formerly having been on Jacquard work, and that is one of the things his sizing manufacturer is talking to him about. J. E. McGee, assistant superintendent at Rosemary, added they use a 4.50 twist multiple on the 10s duck warp and 3.35 on the 5s filling; that they slub the filling and re-quill it for the looms.

D. F. Lanier, superintendent, Oxford (N. C.) Mills, reported that this yarn mill has converted some equipment over to the manufacture of yarns for duck weaving, these being somewhat coarser than their usual product. He is making 8s to 16s, for this purpose, in three- and four-ply. He explained they were at somewhat of a disadvantage because of the small package twisters they run, and he has found out that "these duck people do not like to see knots come up in the yarn so often."

J. W. Cates, superintendent, Edenton (N. C.) Cotton Mills, was called on, but said they are kept so busy supplying the demand for 30s yarn that they have done no conversion. He brought up a problem for discussion: he said on his large package twisters, with a 14- and 16-ounce bobbin, he has just recently encountered difficulty

D. M. Benson, of Erwin mills, who spoke on repair parts reclamation, illustrating one of his points on the blackboard . . . . . .

with the tapes slipping off after doffing; he said they never had this trouble when they were on one shift, but now that they are running two shifts it has cropped up. No one at the meeting was able to throw any light on the probable cause of this trouble.

Discussion on Slashers

Chairman Gilliam asked Mr. Harden to lead the discussion on the fourth and final question, which pertained to slashing. The first portion asked for a discussion of "speed on slasher, steam pressure, temperatures, yarn numbers, etc." Mr. Harden said in his opinion "the speed of the slasher depends on the numbers of yarn you are running, the number of ends, the ingredients in the size and a number of other things which make it necessary that this be determined in the individual mill.

"As to the temperature, we do not depend on the steam pressure to determine the amount of heat. We have a fin about ⅜-inch from the cylinder, extending all the way across, and when the cylinder cools down to a certain point this fin automatically operates the steam valve and consequently the temperature on the surface of the cylinder is accurately regulated and controlled. The steam pressure on the cylinder has very little to do with the amount of heat you are getting on the surface of the cylinder, because the amount of water in the steam, the distance from the power house, the trapping, etc., all affect the amount of heat in the steam. The way we do is to determine the yards per minute we should run each set in order to get the proper drying, and make a chart for each set, and at the same time determine the setting for the valve, and the man uses that as a starting point each time he starts up a different set."

Mr. Mullen brought up here the subject of the instrument which changes the speed of the slasher in accordance with the amount of moisture being left in the warp, saying he felt this is good thing because it gives a more uniform moisture content and a better application of the size as well as increased production, but no one present reported experience with this instrument.

Answering questions, Mr. Harden said bone-drying tests showed as much moisture in sized yarn slashed with the steam pressure gauge at zero as when there was 3 or 4 pounds on the gauge, provided the surface temperature of the cylinders is correct. He tries to keep at least 4½ per cent and not over 6¼ per cent moisture in his sized warps.

Mr. Benson recommended periodic check-ups on the traps of the steam lines on slashers, saying they do this on dry cans in the bleachery and invariably find a number of elements that need to be replaced.

Discussing means of eliminating soft warps at the slasher, C. W. Howell, superintendent, Mill No. 6, Erwin Cotton Mills Co., Durham, said they are now using an asbestos-molded friction disc that helps a lot, as it permits all the pressure necessary to prevent ends from sliding down. As to preventing cut selvage threads, he said they find the press roll on the end cuts the threads and that by beveling the edge of the press roll they prevent the beam head from pinching the selvage ends.

On the subject of covering slasher squeeze rolls, in these days of wool shortages, Mr. Harden said they run a woolen cloth on the back roll, for one run of 28,000 yards, and then swap this new cloth with the used one on the front roll, where it is run for three sets. The swapping is done by means of a level, and the weight of the squeeze rolls was made the same. He uses a sheeting under the wool covering, and as to painting the rolls, said he has an extra pair of rolls on hand at all times, which is kept painted, and when a newly-painted set is needed, these are put in. He said that under present operating conditions, he does not believe it advisable to wait 12 months, as formerly, to paint the rolls.

This concluded the discussion, and after the election of the officers, as reported, the meeting was adjourned at noon.

AATCC in Atlantic City, Oct. 8-10

The annual meeting of the American Association of Textile Chemists & Colorists will be held in Atlantic City October 8-10. Heretofore the technical program for these meetings has consisted chiefly of the presentation of prepared addresses by speakers who are prominent in the textile and dyestuff industries. This year an innovation will be tried out because the theme of the entire meeting will be the textile chemist's contribution to the war effort and it is felt that more can be accomplished through an exchange of opinions and experiences of the membership drawn from all the textile centers of the country than by prepared addresses.

Some of the subjects which have been suggested for round table discussions are: 1, Dyeing wool and its blends; 2, Cotton—mildew, water and fire proofed; 3, Pigment colors versus vat dyes; 4, Hosiery, then and now; and 5, Emergency substitutes—dyes, chemicals and processes.

A chairman will be appointed for each group and the opportunity freely offered to every member to present his problem and get the co-operative help and advice of those present who are in the same line of work. The groups will be kept small and intimate. To promote the free exchange of experiences, no stenographer will be present and the proceedings will not be published.

This type of program has been most successful in several local sections and has been unanimously adopted for the national meeting as the best means by which the textile chemists can contribute to the war effort.

These group meetings will take place on Saturday morning and supplement the regular intersectional contest which will be held Friday afternoon as usual. No doubt, many of the papers at the intersectional contest will fall within the scope of the subjects listed above for the round table meetings. This new type of program on Saturday will afford a better chance for the discussion of these contest papers than has been possible previously.

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Pepperell Foreman's Club Holds Meeting

The Pepperell Foreman's Club of the Pepperell Mfg. Co., Biddeford, Maine, held its regular monthly meeting on May 9. After the business meeting the members gathered in the Social Hall where an excellent supper and entertainment was provided. A series of motion pictures furnished by the Shell Oil Company was shown. The meeting was conducted by the president, Edward McDuffey, and arrangements for the supper were made by Miss Gladys Hamel and an able group of assistants.

A Safety Manual for the Mill

By E. S. Greene
Engineer, The Aetna Casualty and Surety Company

Part One

PURPOSE

The purpose of this manual is three-fold:

First, it is intended for the textile worker to read, understand and follow to the best of his ability for the purpose of working in such a manner as to avoid injury to himself and his fellow worker.

Second, this manual is intended for the mill supervision to assist them in training their people to work without injury, and the safe practices outlined herein are to be taught and followed up constantly. It is essential to explain the hazards of his job to the new employee before he is turned loose on his job. It is just as important to check the habits of the old employee to make certain that he has not lapsed into dangerous habits and a careless manner of doing his work, as it is unfortunately true that "familiarity breeds contempt".

Third, this manual may serve as the basis of activities of any safety committee that might be organized. However, the committee should consider this manual not as a limit to their activities, but rather as a guide when needed.

It will be of interest to realize that every rule set forth in this manual is the result of an investigation of some actual accident that occurred in a textile mill in the Southeast.

SAFETY COUNCIL

In each department there is to be formed a safety committee including at the start the overseer and two second hands or foremen. They will function as follows:

Inspection:

Once each week (optional) the committee in each department will inspect some other department and submit written reports containing recommendations for safeguarding the department and improving the safety conditions therein. This should include unsafe practices as well as unsafe physical conditions. Each report is to be submitted to the superintendent. All items will receive whole-hearted consideration, and those found to be practical will be submitted to either the overseer of the department to which they apply or to the shop for the necessary repair, construction or replacement.

General Responsibility:

In addition to the inspection of other departments it will be the responsibility of these committees to maintain their own departments in as safe and satisfactory condition as possible. Other responsibilities to be assumed by the committee members in their own departments are as follows:

To assure themselves that each employee entering the department is fully informed of all hazards to which he may be exposed and which may produce injury, be that injury the result of accident, injurious substances, or harmful working conditions.

To see that each employee is fully instructed in the safe performance of the duties assigned to him.

To see that any injury or illness of an employee under the supervision of a committee member is immediately reported to the proper authority.

To see that no employee under a committee member's supervision continues to work at any operation for which he is physically or mentally unfit.

To enforce the use of protective devices.

To see that mechanical guards and safety devices are at all times in place and properly maintained.

To see that each employee wears at all times safe and appropriate clothing.

Accident Investigation:

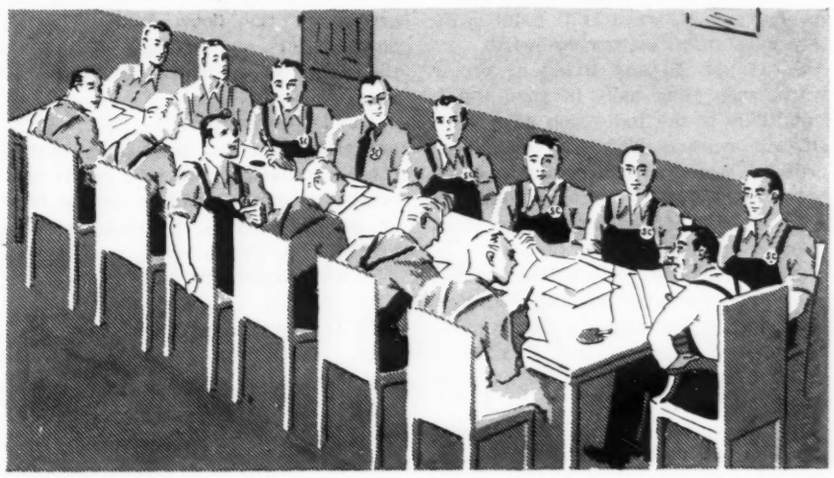
It will be the duty of this committee, or some member thereof, in each department to investigate all accidents resulting from injury in the mill for the purpose of determining the basic cause of the accident and recommending some action to be taken to remove or correct this cause.

Committee Meetings:

Once each month the entire group of committees will meet, together with any additional second hands the committees may desire to have attend. The purpose of this meeting is to discuss the recommendations, hazards, progress of the committee, outstanding or frequently repeated accidents, problems, or any other matters pertaining to safety that any committee member might care to bring up at the time.

Rotation:

In order to reach as many people as possible with this safety program, it is best to rotate one member of each committee on a quarterly basis, but retaining the overseer. This will not only prevent any two or three men from carrying the load indefinitely, but will serve to maintain the interest of the entire department. This job is an honor and a grave responsibility, as these



Representing a typical mill safety committee in session. . . .

men are being charged with the safekeeping of every one under their supervision, and it should be shared by as many as possible.

Recognition:

In order that folks in the mill may realize the honor and responsibility carried by members of the safety committee it is well to have some appropriate buttons or other insignia provided to be worn by these committeemen.

ALL DEPARTMENTS

1. If you operate machinery in motion, don't wear neckties or finger rings. Keep your sleeves rolled up, and avoid loose, ragged and baggy clothing.

2. It is dangerous to oil, clean or repair machinery in motion. Follow the specific instructions of your overseer.

3. Don't distract the attention of a worker by talking to him. If it is not business, save it until quitting time. If you must talk to him during working hours, watch what he is doing, and break in on him only when you can do so without exposing him to injury by his machine or job.

4. Never remove a guard or protective device without specific permission from someone in charge of the machine.

5. Never pull a motor switch with the load on. Shut the machine off first. Failure to observe this rule will result in blown fuses and possible serious injury the next time the motor is started up.

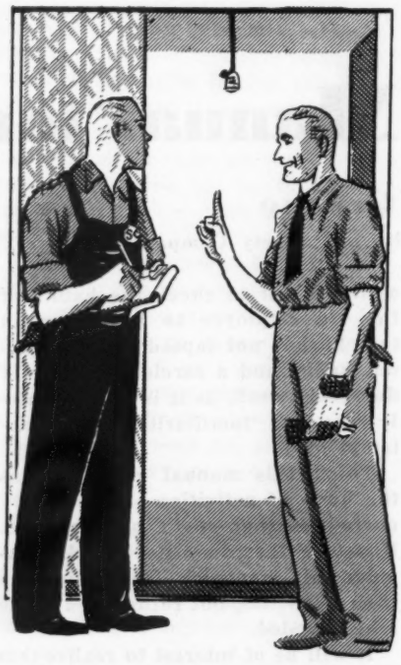
6. If you are not a qualified electrician, leave the electrical repairs to the electrical crew, even if it involves only the changing of fuses. Electricians are trained to do this work without injury to themselves or damage to the equipment. Report any necessary work of this kind to your immediate supervisor. Do not try to do it yourself.

7. Don't carry an open knife in your pocket. Either close it and put it in your pocket, or carry it point down in a substantial leather scabbard.

8. If you do any fixing or repair work, keep your tools in good condition. This is the indication of a neat, efficient worker. Eliminate such hazards as worn wrenches, mushroomed heads on chisels, split handles on screw drivers and hack saws, and loose hammer handles.

9. Never point an air line at anyone for any reason whatsoever. Men have been killed, and others have lost their hearing and eyesight, because of their friends failing to realize the danger involved.

10. When pulling an air hose across the floor, be sure you don't trip anyone.



"Will you get a new bulb put in the light socket in my elevator, Mr. Safety Committeeman?"

11. Do not bring non-safety type matches into the mill. A fire may deprive you of a job indefinitely.

12. Do not leave your lunch wrappings, bottles or paper cups on the stairs and floor or on top of a frame. Special containers or other arrangements have been made for this disposal just to keep you from being injured.

13. If you see something on the floor that doesn't belong there, pick it up before you come back that way, as you might forget about it and suffer a nasty fall.

14. Report promptly wet spots on the floor resulting from leaking or clogged humidifiers, drinking fountains, or any other water or steam lines.

15. Report any oil spots on the floor. When you oil machinery avoid splashing or spilling oil, or dropping grease on the floor. When blowing down motors and hangers, don't blow the oil out of the catch pans onto the floor.

16. Do not spit on the floor, in corners, or under machines. Not only is this an unhealthy practice, but it may result in someone falling to the floor or into a machine. If cuspidors are provided for this purpose, use them to help keep your mill clean and safe.

17. Report to your foreman any light bulbs that have burned out.

18. Keep walkways and aisles clear and orderly.

19. Walk, never run, through the mill.

20. Horseplay and fooling, throwing objects and teasing are strictly prohibited.

21. Pass through doors with care. Someone may be standing on the other side. When going through double doors always use the right-hand door.

22. Wear shoes with substantial soles and heels to avoid slipping and also being cut on the foot.

23. Report immediately for first-aid treatment all accidents, no matter how slight they seem. Failure to do so may easily result in a serious infection.

24. Don't try to be your own doctor. When you receive an injury, especially to the eye, go to the person in your department who administers first-aid. If he does not feel competent to handle the treatment, he will provide you with authority to go to the company doctor.

25. Leave the arrangement of the windows to those whose duty it is to take care of this matter.

26. If there is anything about your job you do not understand, do not hesitate to ask your immediate supervisor before going ahead. He will show you the safe way as well as the right way to do it. Follow the rule, "When in doubt, don't do it".

27. When lifting, use your leg muscles and not your back. Keep your back as vertical as possible, and do the bending with your legs. Discuss with your overseer any undue lifting hazard.

28. Do not overload trucks used within the mill. Do not leave trucks on the spare floor or in alleys where workers are apt to stumble over them.

29. Do not stand on boxes or roving cans. Ladders are provided to enable you to reach the high places.

30. Avoid riding on mill elevators except on business and when authorized. The stairs are safer and usually quicker.

31. Before starting up any machine, make certain no one is working on it.

USE OF ELEVATORS

It is very possible that the elevator in your mill is the most dangerous piece of equipment you will ever be called upon to use, and for that reason it should be treated with the proper amount of respect and forethought.

1. Never get on or off an elevator until it has come to rest, whether you or someone else is operating it.

2. Do not try to open a gate or door until the car has come to rest.

3. If you have a truck or box on the car, don't sit on it while riding the elevator, but stand firmly on both feet. Many people who would otherwise not have been hurt have been seriously injured because of failure to follow this rule.

4. If the car is provided with a regular operator, keep your hands off the

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Our JOB IS TO HELP YOU DO JUST THAT

Ready working capital enables you to speed-up orders by purchasing raw materials at a saving... by earning discounts... by meeting payrolls and taxes.

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controls and gates.

5. Don't lean against the landing door or gate while waiting for the car to come to your landing.

6. When riding in the car stand well back from the entrance, and don't let a truck or wheeled box get between you and the *back* wall of the car.

7. If you notice that the electric light on a car has burned out, notify your overseer if the car is not in charge of a regular operator whose duty it is to report such items.

8. If the car is provided with a regular operator and a signal system, use the signal and don't kick on the hoistway landing doors. They weren't designed to take such abuse, and the operator will get to you as soon as he can.

9. If you have to operate the car to carry your load to some other floor do not fail to use the cable lock as you have been instructed, keeping it locked while loading and unloading, and not forgetting to unlock the cable when you have finished using the elevator.

10. If you are pushing a wheeled truck of any kind, do not move it on or off the elevator until the car has been made as level as possible with the landing.

11. Keep any load you may have on the car clear of any exposed hoistway walls.

12. When pushing a truck onto the elevator don't slam it into the back wall of the car. You may poke out a plank which will later strike the hoistway wall and injure someone riding on the car.

13. Avoid dropping rubbish and debris on the floor of the car. Not only have containers been provided throughout the mill for this purpose, but a slip and fall on a moving elevator is apt to result in a most serious injury.

(The second part of this manual on safety, to appear next month, will cover the manufacturing departments of the mill, and the third installment will complete the discussion by presenting safety rules for allied departments such as the warehouse, shop, opening room, etc.—The Editor.)

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Quick Conversion of Cord Mills Yields Vital Duck for Army

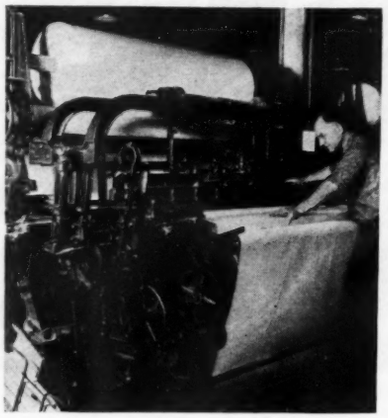
By quick conversion, mills of United States Rubber Company which formerly produced tire cord are now turning out large amounts of duck for essential army and navy products, such as life rafts, pontoons and gas mask carriers. Of the company's five mills, three have been converted to the weaving of duck and the spinning of yarns used largely in duck. The other two mills also produce large quantities of duck yarns, the only tire cord still spun being supplied to the company's tire plants for essential military tires.

According to the announcement made by H. Gordon Smith, general manager of the company's textile division, the previous high mark of production in terms of square yardage has already been reached, and will be more than doubled in the near future. In addition the company is supplying large quantities of yarns to upholstery and carpet manufacturers who likewise are converting their plants to the production of duck to meet army and navy requirements.

Previously the products of the textile division were limited to cord for tire plies and fabrics for chafer strips. These products require a large capacity of carding and spinning and a comparatively small number of looms.

When civilian tire production was stopped, most looms were immediately converted to the weaving of cotton duck. Old looms were taken out of storage wherever they could be procured, and reconditioned. Additional looms were bought. This gave the division a considerable capacity for the production of lightweight cotton ducks. But since military requirements also included a heavier duck, the company purchased an additional mill with a capacity for weaving the heavier grades.

The surplus spinning capacity of the



A duck loom in a U. S. Rubber mill

textile mills has been converted from tire cord to the production of duck yarns. This yarn is sold to other manufacturers, to webbing manufacturers for the production of parachute cord and to other duck manufacturers for the production of almost every conceivable industrial or military product where duck is used.

◆

Bulletins on Dyeing Government Fabrics

The Calco Chemical Division of the American Cyanamid Company, Bound Brook, N. J., has announced a number of new bulletins on the dyeing of fabrics procured by the U. S. Government —in line with their policy of endeavoring to aid textile concerns in the conversion of their operations from civilian to government materials. The list of these bulletins, with the description of fabrics on which each gives thorough information as to dyeing procedure, including the complete Government specifications and requirements, follows:

No. 624, olive drab cotton tape with direct colors for mosquito bar taping; No. 639, olive drab No. 3 cotton twill uniform lining; No. 640, olive drab No. 3 cotton silesia lining cloth; No. 641, olive drab No. 3 cotton uniform twill, Type III or IV, for overcoat lining; No. 645, U. S. Army olive drab wool for uniform cloths; and No. 651, tan cotton canvas padding, grade 6.

◆

R. & H. Chemicals Department Name Changed to Electrochemicals Department

E. I. du Pont de Nemours & Co., Wilmington, Del., have announced a change in the name of its R. & H. Chemicals Department to Electrochemicals Department. The new name was chosen because it describes the type of products created by this department. The original name arose from the fact that the department was created after the acquisition by Du Pont in 1930 of the Roessler and Hasslacher Chemical Co. Under that name the department has been a leading producer of chemicals made by electrolytic processes. At its largest plant sodium and chlorine are produced electrolytically.

◆

Honor Students at N. C. State College

William F. LeGrand, son of R. T. LeGrand, treasurer of the Shelby (N. C.) Cotton Mills, was graduated from the Textile School of N. C. State College, Raleigh, N. C., with honors and was awarded a Tompkins Textile Society key for service to the textile school. Kenneth A. Shinn, Jr., son of K. A. Shinn, superintendent of Cannon Mills No. 8, China Grove, N. C., likewise received a Tompkins key. Eugene LeGrand, William's brother, a sophomore in the textile school, was cited for high honors, and O. Max Gardner, Jr., son of the former Governor of North Carolina, was cited for high honors and awarded the key donated by Phi Psi fraternity to the textile sophomore attaining the highest scholastic average for five terms of college work.

"Singin' in the rain"

Weatherproofing an army of four million men . . . six million men . . . eight million men . . .

Protecting the comfort and health of the men behind the guns with fabrics that defy wind and rain, sleet and snow . . .

It is the new service finishes on Army outerwear that keep men "singin' in the rain."

The ever-increasing demand for water repellent fabrics places new responsibilities on the wet finishing department. Here, Butterworth Machines are already working under terrific strain, playing their part in the battle of production.

As Butterworth Jiggs, Padders, Quetsches and Compartment Machines go into production on the new service finishes, mill engineers and superintendents are constantly on guard to detect the first letdown in quality or quantity of production . . . and then seizing every opportunity to repair or replace worn-out equipment.

Since 1820, the Butterworth Organization has served the Textile Industry—pioneering, building and improving machinery for the Wet End of Textile Finishing.

Today, while Ordnance production has first call on our facilities, we are still producing Textile Machines as called for in America's great war effort.

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of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

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PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

CURRENT TEXTILE TOPICS

Intense conversion for the half-year

EFFORTS of a government which was on defense six months ago to reach a state of offensive warfare have entailed an intense conversion program for industry, in which the cotton manufacturer has found himself constantly under adjustment to new conditions. The astounding developments in cotton textiles, incidentally, are due to recognition by the government of the great importance of this industry to its war program.

Thus the OPA in its promulgation on April 24 of Maximum Price Regulation No. 188—Cotton Products—stated that "the manufacture of cotton textiles constitutes one of America's major industries. The industry employs some 500,000 workers, more than any other in the country. . . . Today cotton textiles are used for, and are indispensable to, hundreds of civilian, industrial, and military needs.

"In 1942 the peremptory demands of heavy military requirements will be superimposed on an industry which for more than a year has been near capacity. These requirements, which will consume a vast percentage of our textile production, are not only for clothing but also for such items of equipage as mosquito netting, tents, gun and truck covers, cartridge belts, and other articles."

Constant pressure for more output

Meantime, the government was found exerting constant pressure upon the cotton textile industry for more output. The cotton goods limitation order of April 21 by the WPB, designed to increase production of bag materials from 751,500,000 to 1,515,500,000 yards annually, was a case in point. This incidentally, was an instance of dependence upon cotton to replace imported fibers, with need to find a substitute for 800,000,000 yards of burlap.

At the same time, it was obligatory upon mills that looms making numerous colored yarn goods and some domestics should turn over a fifth of their machines to a specified list of osnaburg constructions. Meantime, all Class A and B sheeting looms, half the C type, 40 per cent of soft-filled sheeting and the same percentage of certain napped goods were to be turned over to specified bag trade sheetings.

This program of conversion not only pointed to temporary elimination for the most part of production for civilian trade, but was estimated to call for almost unbelievable totals of mill output. The WPB's mill conversion orders, said the New York Cotton Exchange Service, look toward a 14,000,000,000-yard cloth output this year and 15,000,000,000 yards in 1943.

Much confusion in the program

While William N. Banks, retiring president of the American Cotton Manufacturers' Association, stated that "some of these days the mills in America ought to be able to consume 15,000,000 bales of cotton," it was at the moment a big question how the government program could be met, even with converted carpet and upholstery plants adding to production. Labor and machinery difficulties, said the New York Cotton Exchange Service, posed the chief uncertainties.

Cotton manufacturers were in a state of confusion, moreover, as to interpretation of the conversion order. The change was comparatively simple for manufacturers previously engaged to small extent on priority business. For mills running 50 per cent on A-1-a to A-1-i, or even 100 per cent of A-2 or better, the problem was difficult, with no immediate ruling as to whether they must also convert to bag goods.

Confusion was multiplied by the General Maximum Price Order of April 28, which in cotton lines replaced the sliding scale regulations. There was complaint that the OPA had piled into the lap of the industry such a multitude of regulations that it was simply impossible to digest all of them. The cotton-textile industry was felt to be regulated more frequently and extensively than most others.

• A 1942 version of seersucker which combines Koda, Eastman acetate rayon, with cotton. Koda gives the crisp weave a smoother, cooler feel, permits colorful cross-dyed patterns like the crinkly glen plaid shown. Photo, courtesy Tennessee Eastman Corporation

Profit considerations, mill labor matters

Co-operation with the government in the war program, under such circumstances, has been effected under difficulties. Trade leaders, however, have expressed themselves as determined to lend every effort toward making a success of the government's plan. In this, they include co-operation toward forestalling or stemming inflation, which as we have previously pointed out is well remembered in the trade as a disastrous aftermath of the first World War.

Exception was taken, meantime, to the findings of OPA on mill profits in 1941 which led that agency to consider action for reduction of what were believed excessive margins. Mill men found a list of 50 "cotton" mills included two which ran exclusively in rayon and many were in the finishing field; also that much of the profits derived from inventories of raw cotton.

Serious mill problems from the labor side also have developed and the outlook is dubious. The case of Sunday overtime and lay-offs for other days appears to have been ameliorated by vigorous action of Donald M. Nelson. Other employment conditions are still a problem.

Replacement of men called in the armed forces is one serious phase. It is stated to have affected quality of production. Many workers are reported to have built up full ratings for unemployment compensation and found subterfuges for taking vacations.

It is felt that ways will be devised to check such a "racket", but other problems are involved. In the South, for example, mills contiguous to the cotton fields are expected to lose men turning to cultivation of the crop. Some relief from men lost in the draft may come through training of workers in the textile schools.

...why you may soon be using Accotex Aprons

APPROXIMATELY 435,000 spindles are now equipped with Armstrong's Accotex Aprons. Every one of them is a good reason why *more and more* spindles will be Accotex-equipped. For they are spinning better yarn . . . giving mill operators a convincing demonstration of Accotex superiority over old-type Aprons.

Here are the six outstanding qualities of Accotex Aprons which make them superior:

SEAMLESS: Accotex Aprons have no seams to break open and shorten life.

NONSTRETCHING: Accotex Aprons are reinforced with a sturdy interliner . . . eliminating loss of operating efficiency due to stretching.

UNIFORM: All Accotex Aprons have identical composition. Dimensions of every size are accurate. Barring unusual accidents, each Apron will give the same good service.

WON'T CRACK OR SCUFF: Accotex Aprons give cleaner running work and reduce waste to a minimum, because they don't crack or scuff during operation.

STABLE: Accotex Aprons are not affected by changing temperature or humidity. As a result, these Aprons perform with a minimum of lapping.

GOOD FRICTION SURFACE: Accotex Aprons provide a uniform "grip" that keeps slippage at minimum. Thus they aid maximum production of a high quality yarn.

Armstrong's Accotex Aprons are *perfected* aprons. Years of research, testing, and field checking preceded their introduction to the textile industry. They're made of a non-oxidizing and highly oil-resistant compound developed specifically for textile manufacturing. Many Accotex Aprons now in use have given over two years' service and show little evidence of wear.

You can get prompt delivery on Accotex Aprons, so why not see your Armstrong representative right away for full details? Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS
CORK COTS · ACCOTEX COTS

New England Mill Situation

SPRING BUSINESS in fine combed cotton goods got down to an allotment basis as pressure upon mills from government demands necessitated more and more conversion. The tendency toward conversion was stimulated by the General Maximum Price Regulation, with manufacturers in the most complex situation ever experienced.

During much of the May period, attention was concentrated upon the problems involved in the price freezing order, which was felt to threaten extinction for some constructions unless adjustments were made. It appeared that the converters of highly-styled cottons, for example, had no incentive to do fall business unless concessions came from the OPA.

Selling of cloth for civilian lines dwindled to practically nothing at times in the past month while mill men figured against maximum March prices. With income of producers determined and cost of production still left to fluctuate in a period of inflationary trend, it was felt that only government subsidy or concessions on seasonal lines would keep production going on certain vital civilian lines.

Government demand takes even seconds

Purchases for the military procurement program, meantime, were so imperative that even seconds and shorts of various gray cotton goods were reported acceptable. Definite information on the percentage of production for military uses has been hard to find. It was estimated unofficially as high as 60 per cent early in May. The emphasis on call for seconds, however, reflected eagerness for supplies and readiness to take everything available.

On the other hand, the very intensity of the procurement program is the best hope of change. The cotton mill industry has attained a tremendous scale of production, to meet the extraordinary demands. What the future military needs will be is not known at present and taking care of normal civilian needs may not be possible for a long time.

Nevertheless, observers in the goods market recently stated that there had been the appearance of government requirements becoming fairly well satisfied on the contracts placed up to May. Thus it was indicated that a gradual improvement in the amount of goods available for civilian buyers might be expected, unless events take an unforeseen turn.

It must become more definitely clear, said the New York *Journal of Commerce* at mid-May, that government orders are in process of tapering off and possibly eliminated. When the facts make it evident various mills which have held a certain amount of production off the market are seen as prospective sources of further and larger supplies. In any event, weekly offerings show signs of a slight increase.

Cotton consumption in upward curve

Latest figures on cotton consumption show New England going along in the upward curve of the first quarter. The total for the district in April was 118,827 bales, or nearly 12 per cent of the national record monthly consumption that month of 998,754 bales. The New England figure was sharply above the total in March, which was 113,916 bales. The April, 1941, total was 116,059 bales.

For the nine months of the season to April 30, this district registered a consumption of 983,862 bales of cotton, according to the Bureau of the Census. This was a gain of more than 18 per cent on the 830,511 bales consumed in the same period of 1940-1941.

Maine makes relatively the best gain for April, over a year before, with consumption of 20,235 and 18,042 bales, respectively. Massachusetts accounted for 62,939 bales in April, against 61,872 a year previous; New Hampshire, 13,637 versus 12,792; Connecticut, 8,231 versus 8,228. Consumption in Rhode Island had a dip, at 13,493 versus 14,722 bales in 1941.

While production in general among the mills has responded to the national need, the northeastern district in the second quarter was complaining of labor shortage. In Massachusetts the third shift continued to be the exception rather than the rule. Rigid restrictions remained, although the Commissioner of Labor for the state was authorized to make exception where good priority business could be shown.

Growing scarcity of labor led officials in some Fall River mills late in April to seek help from Washington for relief. The government had placed orders for millions of yards of goods to be made there, but to get help for third shifts was a matter of concern.

"THE SITUATION" as Seen Across an Executive's Desk

The War

May 19, 1942

THE CONFLICT of nations continues on the world's battle fronts. The European situation looms large because of its pivotal position. The English lash the coastal towns of the continent mercilessly, while Laval issues his arrogant propaganda. The Nazi-Russian lines swing back and forth with a hopefully cherished belief that the Nazis are not making any material gain. Their terrific Spring offensive has not yet materialized. The bold and belligerent Russians are displaying a valor and offense that wins the admiration of all of those who love freedom and democracy.

The English possession of Madagascar is strategic and important. The world does not yet realize what this enforced position means nor can they understand that England is not imperialistic in her action. It was an Allied necessity and if and when the conflict is over France can understand the strategy and the friendliness of the move.

Martinique is still in the diplomatic state but indications are that satisfactory arrangements can be made so that the allied nations, and particularly the United States will not have any unusual worry because of any unfriendly or hostile attitude that it may assume.

General MacArthur's valiant bands are rapidly at work in Australia mapping out an offensive to check the Japanese. The United States with all of its men and money and materials is working day and night to give to him and the other allies all that is necessary to win and close forever the international conflicts of greed and misunderstandings on the part of our enemies.

The picture is still dark but it looks hopeful. Civilians under the pressure of rationings and price ceilings and labor scarcities, under the influence of taxes and government orders, under the influence of the rapid call of more and more men into service, are growing more serious and thoughtful.

Gradually America is being welded into a great arsenal in thinking and planning. Gradually men turn from their own private business into the public thinking of how we can and must win this war.

Inflation

The specific program proposed by the President, however, utterly fails to go to the heart of the problem. The essence of any effective plan to check

..with Culofix

REG. U.S. PAT. OFF

With priorities . . shortages . . substitutes and the growing scarcity of high grade colors bringing many other problems, there's no need to put up with bleeding in water of direct color dyeings. Whether the trouble occurs while the fabric is batched up after dyeing; in the finishing bath; or any other place where fastness to water is necessary . . *the cure is Culofix*

Used as an after treatment, Culofix prevents such color bleeding in all rayons, cottons and mixtures . . either cloth or hosiery. It is especially valuable for preserving crisp detail and contrast in prints. Ask us how you can try it.

Arkansas Co., Inc.

NEWARK, NEW JERSEY

Manufacturers of Industrial Chemicals for over 35 Years

inflation is expressed clearly enough by the President in the third of his seven objectives:

"To keep the cost of living from spiraling upward, we must stabilize the remuneration received by individuals for their work."

Wage and salary payments each month run approximately $1,000,000,000 higher than a year ago. Even if wage rates are left unchanged, total wage and salary payments will continue to soar. They are being expanded rapidly by:

1. The wholesale shift of workers from low wage jobs in civilian industries to high wage jobs in defense.

2. The constant up-grading of workers in defense plants.

3. The rapid lengthening of the work-week, with payments of time-and-one-half for over-time.

4. Family income, the true measure of buying power, is expanding with particular rapidity because of non-working members of numerous families taking jobs.

It is futile to speak of the stabilization of remuneration, so long as wages and salaries run a billion dollars higher than a year ago, month in and month out, and will continue to expand for the reasons noted. It is equally futile from labor's standpoint to continue to pay out these greatly expanded wage payoents, for the supply of civilian goods is being contracted constantly as more plants are converted to war production. The additional billion dollars of monthly wage and salary payments is the chief mainspring of inflation, which sooner or later will undermine the effectiveness of any ceiling over prices that may be imposed.

L-99

The cotton goods limitation order (L-99) issued recently by the War Production Board and designed to increase production of bag materials from 751,500,000 yards annually to 1,515,500,000, will necessitate broad shifts in the industry. The order is not unexpected, particularly to those who have followed recent news of the burlap market, the 800,000,000 yards annual needs for which are being displaced by cotton goods. In the next 30 or 60 days mills making numerous colored yarn goods and some domestics must turn over a fifth of their looms to a specified list of osnaburg constructions. All osnaburg looms will be devoted to the bag types. Meantime all Class A and B sheeting looms, half the Class C type, 40 per cent of soft filled sheeting, and the same percentage of certain napped goods will be turned over to specified bag trade sheetings.

● "Something new has been added" to the famous Pequot Shield sign, on the roof of the Pequot Mills, Salem, Mass. The addition is a mammoth V in gold, 24 feet tall. As it flashes on, the words "Keep 'Em Flying", 3½ feet tall, appear underneath in brilliant red. As these fade out, the familiar Pequot shield takes their place.

The mills have been in Salem for over 100 years. At present, they are running 50 per cent on government orders, and this percentage will soon be increased. Among the new materials with which the mill research engineers have been experimenting are shirtings, Sanforized cotton fabrics, fabrics of woven glass and spun rayon, luncheon cloths and napkins in attractive and permanent colors; in addition, of course, to the standard Pequot and Salem sheets and Pequot percale. All of these will be available when the end of the war permits attention to commercial products. In addition to these products, Pequot has perfected many products for the government. Rudolph C. Dick is treasurer and general manager.

This means that a least temporarily civilian goods will not be offered to any extent while the shifts are taking place, that civilians will be barred from the use of many cloth types hereafter, and that mills will be confronted with many difficult problems in re-arranging their production and adjusting civilian orders on the books which they are permitted still to fulfill.

Spindle Activity Declining

One of the chief immediate complaints was that the percentage diversion is based on 120 hours weekly operation, and for those mills which have been running 80 hours or less a bigger percentage diversion of output will be forced unless these mills can get help sufficient for longer runs. As pointed out recently, a rise in production is the answer, but the facts are that production has been receding. According to the Bureau of the Census, while the number of active spindles in March was 23,096,479 against 23,077,722 in February, spindles were operated in March only at 134.3 per cent of 80-hour capacity against 135.9 in February and the peak of 136.9 in January. Spindles in place were 24,058,066. Moreover, this rate has been slackening off in the face of a largely unsatisfied demand for goods, with big civilian orders unfilled and even Army orders not easy to place. Furthermore, the demand has included some goods not under ceilings and hence more profitable than bag trade sheetings and osnaburgs will be. It appears that the sufficiency of labor has been the big problem, with the figures bearing out reports of difficulties in this respect, and the outlook clouded until some solution is reached.

A War-Time Wage Policy

Labor unions, in asking for wage increases, usually mention four arguments:

a. Higher wages are sought because of the increased productivity of labor. This might be valid for a peace-time argument but not for a war-time argufent.

b. To maintain the morale and health of the workers in war-time. If weekly wages are studied instead of hourly wages, this argument loses its intensity.

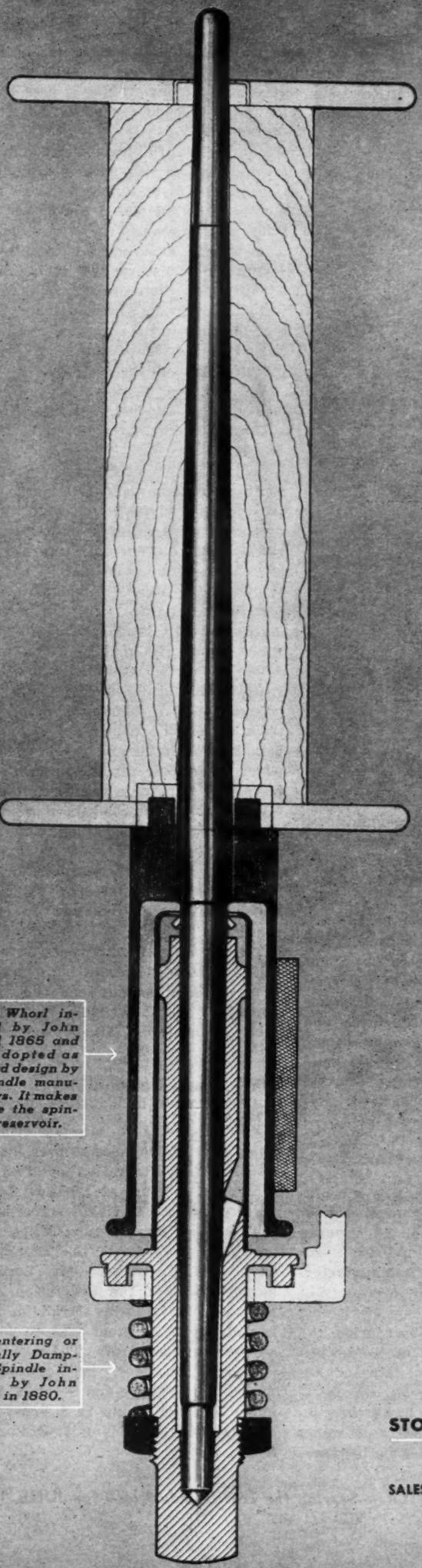
c. Increased wages are justified by increased profits on the assumption that increased wages reduce profits rather than increase selling prices. High wage rates reduce Federal taxes more than they curtail net profits.

d. The cost of living demands an increased wage rate. Increased wage rates will increase the cost of living and make an endless spiral for inflation. There may be an occasional wage rate out of line with the cost of living but this is the exception and not the rule. Wages have increased far more rapidly than the cost of living.

War-time wage policy should seek, first and foremost, to adjust purchasing power to the dwindling supply of consumer goods. This can be done, in the first place, by holding down hourly and over-time wage rates as far as possible. This end requires also a drastic tax policy that will absorb a substantial part of the excess of wage payments over goods available for purchase by wage earners. Such an overall policy has yet to be adopted by the Administration and Congress. Until it is, the success of the over-all price ceiling remains in jeopardy.

The Influence of Burlap

Trade information is that burlap is now being shipped by rail from Calcutta to Bombay, whence ample shipping moving to the Persian Gulf for Russia and to India can pick it up on the return voyage here, through lanes made safer by the British attack on Madagascar. A reliable source states



Sleeve Whorl invented by John Atwood 1865 and later adopted as standard design by all spindle manufacturers. It makes possible the spindle oil reservoir.

Self-Centering or Externally Dampened Spindle invented by John Atwood in 1880.

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GENUINE ATWOOD SPINDLES

The spindle is *the heart of the machine* and the Atwood Spindle is the *"daddy of them all."*

Hundreds of thousands of Atwood spindles are demonstrating every day that Atwood has the combination of fundamentally correct design, craftsmanship and precision production facilities that assures maximum spindle performance, dependability and economy.

Note particularly the simple, solid one-piece construction of the combined bolster and step —eliminating all necessity of internal dampening of vibration through the use of oil. In the Atwood Spindle you use the one best oil for spindle lubrication—not vibration dampening. Longer spindle life and lower power consumption result.

For clean, uniformly twisted yarn at lowest cost per pound, you may continue to depend upon genuine ATWOOD Spindles. If you need new spindles or replacements to carry your full share of the production load, get in touch with spindle headquarters:

THE ATWOOD MACHINE COMPANY

STONINGTON CONN., U.S.A.

SALES OFFICES: STONINGTON • CHARLOTTE • LOS ANGELES • MANCHESTER, ENGLAND
BUENOS AIRES • SAO PAULO • MEXICO CITY
MELBOURNE • SYDNEY • BOMBAY • MADRAS

2,000 bales or 4,000,000 yards daily can be carried by rail, of which 80 per cent ordinarily would come here. If only 50 per cent actually moves here, 50,000,000 yards monthly would be seen against a recent 60,000,000-yard monthly United States consumption rate. This would mean 600,000,000 yards annually if India holds and the new route remains open. Heretofore, 650,000,000 million yards of burlap and 650,000,000 yards of cotton goods have gone into bag manufacturing, and to displace the loss of burlap imports recently indicated, the War Production Board gave cotton mills 30 to 60 days to convert to cotton bag goods production so as to achieve an annual production of about 1,500,000,000 yards.

The Price of Cotton

Cotton mills have not been affected by fluctuations in the price of raw cotton during recent months. Under the sliding scale price ceiling for goods, cloth quotations have moved up and down with raw cotton. This month, however, cotton yarn and goods prices will be frozen at levels corresponding to a price of 20.37 cents a pound for cotton. If raw cotton should rise higher, therefore, the mills' profit margin will be squeezed.

The Federal Government can assure reasonable profit margins to cotton mills in two ways, so long as it is not in position to freeze the present price of raw cotton below 110 per cent of parity, or 20.52 cents a pound. The Commodity Credit Corporation could turn over surpluses of raw cotton to concerns working on military needs at 20.37 cents a pound, to supplement sales of the legal limit of 300,000 bales monthly that have been made since last January. Secondly, the Government could subsidize spinners by an amount equal to any rise in the price of cotton above 20.37 cents a pound.

The nation's supply of cotton is more than adequate for all needs known and in prospect. There is no excuse for permitting the price of the fiber to rise above the relatively high level of 20.37 cents per pound. The best way to keep the price stable would be to have the Government offer all its holdings of the fiber at that price, thus pegging the quotation and, at the same time, disposing of the huge stocks accumulated by the CCC, in past attempts at price fixing. Incidentally, such use of the Government holdings of cotton is precisely that envisaged when the ever-normal granary plan was launched.—From the (*N. Y. Journal of Commerce*).

Secretary of Agriculture Wickard has called upon the cotton farmers of this nation to plant their full quotas in 1942. The cotton industry has a goal of 27,400,000 acres. This call of Secretary Wickard must be coupled with certain very unusual conditions now obtaining in the agricultural South.

Farm Labor and the Cotton Crop

A survey of farm labor in Texas reveals the fact that it is about 40 per cent of what is needed. In states where farms are small and operated only by a family, the labor shortage is more acute. In states where power cultivation is possible the story is different.

There are two outstanding reasons for this shortage of farm labor. The first is that southern boys and men are patriotic and hope never to have a finger of scorn pointed at them, so an unusually large number of farm boys have entered some part of the armed services.

A second reason is the unusual amount of war work with its enticing wages. This war work offers financial rewards far in excess of any agricultural returns. Many farmers and their sons are now engaged in war work. This means that the crops will not be planted and can not be cultivated if worked. It is extremely noticeable this year, to notice the number of women who are in the fields doing agricultural work, trying to make a crop while the men fight or make munitions.

The farmers and their sons must realize that it is as patriotic to produce food as it is to make munitions. The slogan, "Food for Freedom", is no idle statement. The Army and the Navy and the Marines must be fed and clothed so that we can win.

The farmerette may yet be our salvation. They say that the women are always the motive force in any great crusading movement. They are more determined and more self-sacrificing. When people pass the little farms and see the women ploughing and hoeing and working the crops, a salute should be given to them because they are real patriots. There must be food for freedom.

The Hosiery Situation

The hosiery industry, like all others, is confronted with numerous problems in connection with the issuance of the General Maximum Price Regulation. Many of the mills manufacturing children's goods find themselves in the unfortunate position of having made all their deliveries during the month of March at prices fixed when the goods were sold last July and August. Since the cost of all raw materials, principally yarns, has greatly increased since that time and wages have moved forward in some instances as much as three times, it will be impossible for many of the mills to produce goods today at a cost less than the price charged for goods delivered during March.

Many of the full-fashioned manufacturers who had just gone into production on new rayon numbers during the month of March placed low prices on such goods because they were being made under experimental conditions, and they now discover that their prices are far below those of other mills making similar goods who had made further progress in the experimental work during the month of March and have established much higher prices.

To a limited degree, the half-hose branch of the industry is affected in a similar fashion to that of the children's branch.

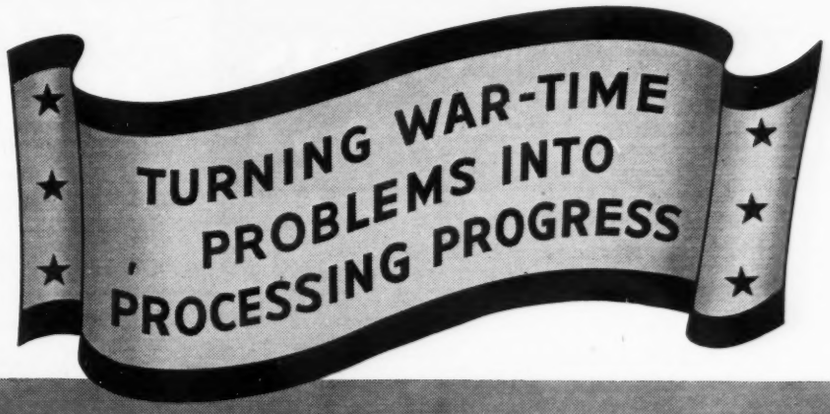
Committees have been set up representing the three primary branches of the industry who will make an effort to obtain some relief from these adverse conditions, but since the Administrator has announced that no adjustments will be permitted which will affect the retail price structure prevailing in March, this may be an obstacle which cannot be readily overcome.

The Rayon Allocation Order has been recently amended which permits the producer to give preference in the distribution of fine deniers of rayon to both full-fashioned and seamless mills which have fine gauge equipment in place. It also permits producers to supply the entire requirements of a single mill without being charged with discrimination, and this will be an improvement for the operation of the mills because it is difficult to fabricate and finish rayon from two or more sources.

The inventory requirements have also been extended, permitting a mill to have on hand at any one time one-and-a-half months' supply instead of being confined to a single month.

Lord Heads National Federation of Textiles

William G. Lord, vice-president of Galey & Lord, was elected president of the National Federation of Textiles, Inc., at a meeting of the new board of directors in May. He succeeds G. H. Conze of Susquehanna Mills, who has been president of the Federation since 1936. To succeed Mr. Lord as vice-president of the Federation, Otis Stanton, of Hathaway Mfg. Co., was named. Irene L. Blunt was re-elected as secretary-treasurer. The executive committee includes, in addition to Messrs. Lord, Conze and Stanton, Alexander F. Ix of Frank Ix & Sons, Inc., and James E. Shields of J. P. Stevens & Co., Inc.



REPLACING GELATIN IN RAYON SIZING WITH HOUGHTO-SIZE RN

TODAY every mill using synthetic yarns is seeking a suitable replacement for gelatin in its sizing process. ★ Houghton foresaw this condition arising long before America entered the war and developed HOUGHTO-SIZE RN, a highly concentrated sizing compound in granular form. ★ HOUGHTO-SIZE RN is an *improved* sizing agent for rayon and filament warps. It leaves a clean, uniform surface on the drying can; no tackiness or gumminess. It is easily boiled out, leaving the fabric with the proper softness and handle. ★ Test HOUGHTO-SIZE RN in your own plant under actual operating conditions and see why it is no mere substitute but an actual *improvement* in Rayon Warp Sizing.

E. F. HOUGHTON & CO.
303 W. Lehigh Avenue, Philadelphia
1301-05 W. Morehead Street, Charlotte

HOUGHTON
PRODUCTS FOR THE TEXTILE INDUSTRY

TIMELY NEWS ITEMS with a TEXTILE SLANT

Walter Geist has been elected president of Allis-Chalmers Mfg. Co., Milwaukee, Wis., succeeding **W. C. Buchanan**, whose resignation was forced by ill health. Now 48 years of age, Mr. Geist entered the company's employ in 1909 as an errand boy. In 1925, he invented the Texrope V-belt drive, primarily for the textile industry. this soon found applications in other markets, and, since 1925, has resulted in a volume of over $30,000,000 to the company. Mr. Geist was made a vice-president of the company in 1939. He was executive vice-president for one month prior to his election to the presidency. In 1940 he was awarded the "Plaque of a Modern Pioneer", by a committee of distinguished scientists, for his research and original work in the power transmission field, as a recognition of the importance of the Texrope drive to American industry.

Lloyd T. Howells has been appointed general manager of Beach Soap Co., Lawrence, Mass. A graduate of the University of Buffalo, Mr. Howells for the past 18 years has

Mr. Howells

been actively engaged in the manufacture, application and chemical sales research of detergents in the textile and allied fields. Beach Soap Co. was recently acquired by **Gordon R. Fulton**, president, and has strengthened its research staff and is carrying on an effective development program on detergency for the benefit of the textile industry.

A. W. Robertson, chairman of the Westinghouse Electric & Mfg. Company, recently conferred the Westinghouse Order of Merit on **G. Edward Pendray**, assistant to the president in charge of publicity and advertising, and **James Boyd**, eastern district manager of the company.

American MonoRail Co., Cleveland, Ohio, has announced the consolidation of the company's offices in Charlotte, N. C., and Atlanta, Ga. The entire southern territory is now under the direction of **W. S. Murphey**, manager of the Atlanta office, at 1000 Peachtree St., N.E. This office represents the company on both overhead handling equipment and automatic overhead cleaners for the textile industry. C. **L. Pogue**, service manager of the company in the Atlanta area, has been called into active duty with the Ordnance Division of the U. S. Army and is now on overseas service.

Mr. Murphey

Election of four Westinghouse executives to the rank of vice-president has been announced by **G. H. Bucher**, president of the Westinghouse Electric & Mfg. Company. They are: **Andrew H. Phelps**, of Pittsburgh, general manager of purchases and traffic; **L. E. Osborne**, of Philadelphia, manager of the steam division; **Frank C. Reed**, of Jersey City, president of the Westinghouse Electric Elevator Co., a subsidiary; and **Walter C. Evans**, of Baltimore, general manager of radio, x-ray and broadcasting divisions. All the new vice-presidents will continue in their present executive posts.

Charles W. Rice, Jr., has been appointed advertising manager of the American Viscose Corporation, 350 Fifth Ave., New York City. He has been with J. M. Mathes, Inc., where he was active in connection with the American Viscose account. He is a graduate of Pennsylvania State College, and took a Master's degree at Massachusetts Institute of Technology.

Paul Vasser Seydel, of the research staff of Seydel-Woolley & Co., Atlanta, Ga., is now a lieutenant in the Chemical Warfare Service, located at MacDill Field near Tampa, Fla. He received the degrees of B.S. and M.S. in chemistry at the Georgia School of Technology, working for two years subsequently with Professor L. Ruzicka in Zurich, Switzerland.

Lt. Seydel

New Textile Publications

Metallizing Engineering Co., Inc., Long Island City, N. Y. Bulletin 42A, 16 pages, describing the metallizing process and equipment for its application. Tells how industries are eliminating replacements and increasing service-life by building up worn daimeters with any desired wear, and corrosion-resistant sprayed metal.

Blackmer Pump Co., Grand Rapids, Mich. Bulletin No. 301, "Facts about Rotary Pumps". Four pages, describing the company's pumps with sketches of essential elements.

B. F. Goodrich Co., Akron, Ohio. Four-page catalog section on recently-announced synthetic rubber sponge, made from Ameripol synthetic rubber. Properties are described and dimensions given for stock sizes. Ameripol sponge is controlled by the same governmental restrictions that apply to natural rubber. A part of the catalog gives a table comparing the property relation of the new synthetic rubber and the natural rubber sponge.

New Departure Division, General Motors Corp., Bristol, Conn. First of a new series "New Departure Engineering Service", under title, "Details of design of shafts and housings for ball bearings." It includes such subjects as proportions and finish of bearing seats, locknut threads, recommended shaft shoulders, designing to aid disassembly, locating and clamping methods, and the use of adapter sleeves.

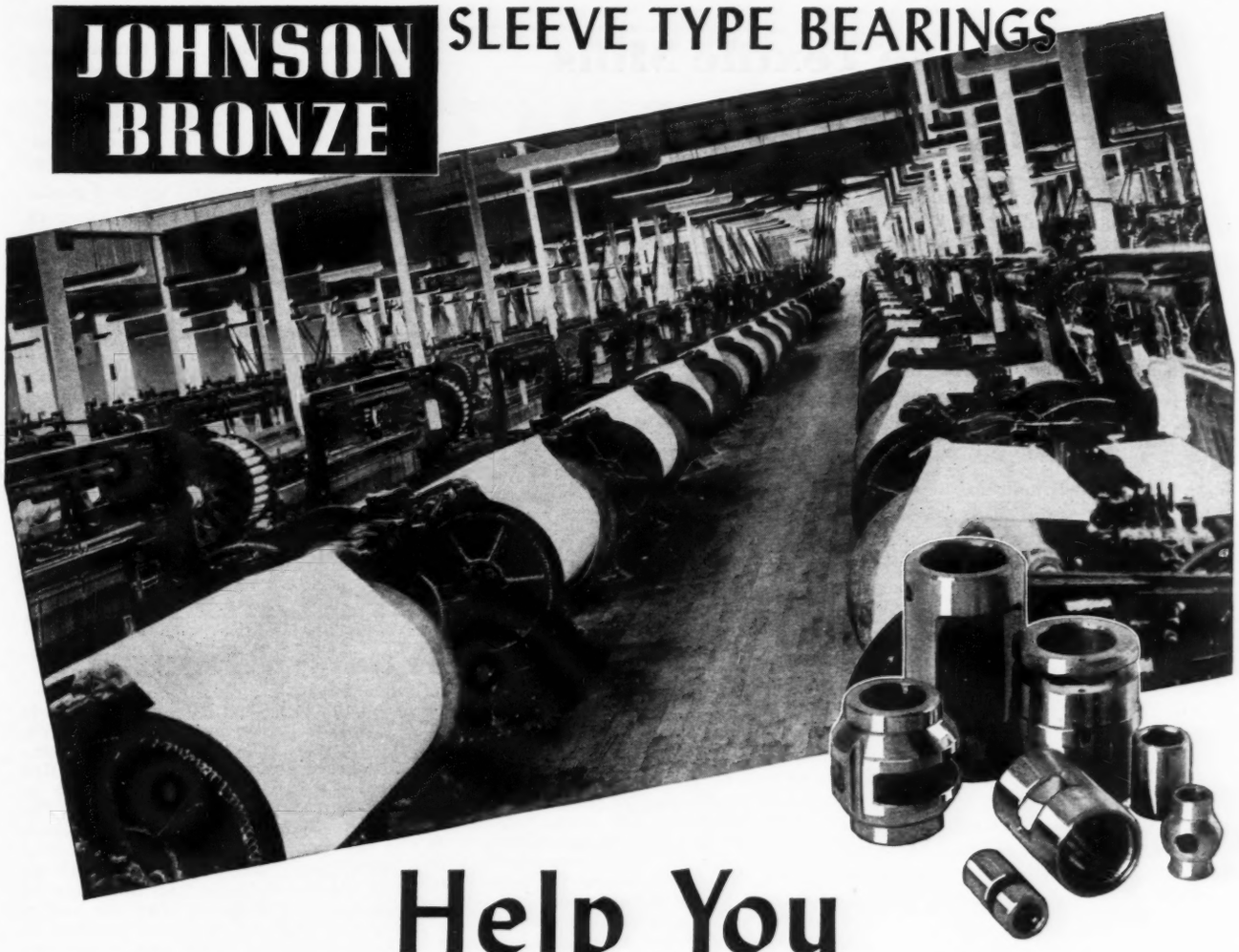
Leeds & Northrup Co., Philadelphia, Pa. Catalog N-27, "Micromax Speed Recorders" describing the use of these instruments in various types of industrial applications.

Manhattan Rubber Mfg. Div., Raybestos-Manhattan, Inc., Passaic, N. J. "Wall Cards on Care of Rubber Hose". Two useful wall wall cards, 8¾x11 inches. One is devoted to the proper care of fire hose, and the other lists rules for the proper care of air, water, steam and other types of rubber hose and for proper attaching of couplings.

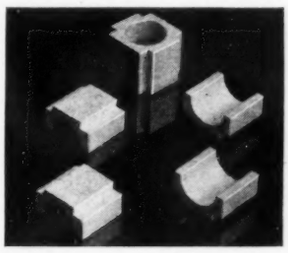
Bristol Co., Waterbury, Conn. Bulletin P1102, describing the company's newly-developed line of Pyrovac radiation pyrometers. The folder gives the theory of operation and information regarding the use of radiation pyrometers.

Universal Winding Co., Providence, R. I. No. 32 of a series on "Getting the Most from Winding", including discussion of winding bobbins for nylon fabrics and winding bobbins of glass yarn.

JOHNSON BRONZE SLEEVE TYPE BEARINGS



Help You Step up Production



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A self-lubricating powder bronze bearing especially developed for Textile applications. Requires no additional lubricant. Write for literature.

The most important duty confronting mill owners today is constant operation of *all* equipment. Delays, in times like these, are costly . . . and, in most cases unnecessary.

We can help you *prevent* delays. Simply check your bearing applications. Select those most likely to fail or to drop in efficiency. Then order spare parts from your local Johnson distributor or Johnson Bronze warehouse. Ample stocks of every type of bearing are on hand for delivery. Every bearing is the highest quality possible.

Our new catalogue describes this unusual bearing service in detail. Write for your free copy today.

The MOST COMPLETE SLEEVE BEARING SERVICE in the world

JOHNSON BRONZE COMPANY

Sleeve **BEARING HEADQUARTERS**

530 SOUTH MILL STREET • NEW CASTLE, PA.

What the Textile Mills Are Doing

American Viscose Corporation expended a total of about $1,650,000 for mill expansion and improvements during the first quarter of 1942. Further extensions and betterments will be carried out at various plants for increased yarn production, as well as for the manufacture of Avconit, the new chemical size developed by the company for use on rayon yarns to be knit into hosiery.

J. L. Channell, manager of the Opp and Micolas Cotton Mills, Opp, Ala., has announced that the mills are continuing their expansion program; doubling the size of the opener rooms at both mills, and erecting fences around the property. The modernization work also includes re-painting and the construction of several houses in the village.

The Valentine Mill of Allen A Company, Bennington, Vt., is now in full production, including spinning, knitting, dyeing and finishing, of knitted fabrics under the firm name of David Cummings, Inc. Charles Forest is superintendent, and the plant employs 275.

Southern Weaving Co., Greenville, S. C., is constructing an addition of a two-story weave shed. J. E. Sirrine & Company, Greenville, S. C., are the engineers, and C. M. Guest & Sons, Anderson, S. C., are the contractors. No additional machinery is planned at the present.

The No. 2 plant of Highland Park Mfg. Co., Rock Hill, S. C., has increased the number of its looms to 300. The mill is changing over to Army shirting twills, with complete eventual operation planned on materials for the army and navy.

Changes and improvements at the Exposition Cotton Mills Company, Atlanta, Ga., include the installation of considerable new spinning and roving frames. The work also includes change-overs to pivoted motor base drives on a number of existing frames.

A small plant is being equipped at Maxton, N. C., with M. M. Roberts, formerly of Morgan Mills, Laurinburg, N. C., as superintendent. It will contain 11 sets of wool cards and 8 mule spinning frames.

C. H. Masland & Sons, Inc., Carlisle, Pa., manufacturers of carpets and rugs, have converted a large part of the mill equipment to the production of duck and webbing, army truck tarpaulins, etc.

Albert J. Barston, Inc., Charlotte, N. C., are installing 49 Crompton & Knowles automatic looms for the manufacture of drapery and upholstery fabrics and government materials.

Samoset Cotton Mills, Talladega, Ala., are installing an extensive equipment of fluorescent lighting facilities in connection with a general mill improvement program.

Great Barrington (Mass.) Mfg. Company, Inc., operating a bleaching and finishing plant for cotton piece goods treatment, has begun work on a one-story addition, 48x165 feet.

Morschner Dye Works, Inc., Needham, Mass., operating a dyeing-finishing mill for woolen and worsted goods, has awarded contract for a one-story addition, 40x85 feet.

Wanskuck Co., Providence, R. I., worsted goods manufacturers, are making an addition to the mill boiler house.

International Braid Co., Providence, R. I., is erecting a boiler house addition to cost approximately $20,000 with equipment.

Woonsocket Spinning Co., Woonsocket, R. I., manufacturers of woolen and merino yarns, are constructing a one-story addition to the plant.

The Cotton Waste Market

Boston, May 16, 1942

BUSINESS in cotton waste leaves much to be desired as to volume but prices are steady on a level generally agreeable to both dealers and their customers. Not much hope is entertained of any pronounced expansion in the call for cotton waste, because for some time to come the consuming outlets of the industry at the civilian end are being pushed into a poor second place by the requisitioning of machinery for Government needs co-inciding with a sharp contraction in the production of civilian manufactures.

Continued dullness in the market can hardly be taken as a true reflection of the waste situation as a whole. There is a lot of waste moving hither and yon at firm prices. Actually lacking is a more comprehensive and immediate purchasing movement. This may not occur under the disturbing conditions prevailing in industrial life under war stress. However, a steady slow business is predicted with the possibility that new outlets for cotton wastes in Government goods will improve the situation.

Dealers are gratified at the absence of a ceiling. There is really no reason for such action as cotton wastes have been thoroughly deflated and all along the line are selling below what might be considered a normal relation to virgin cotton.

Nowhere is there any expectation of a falling market as a result of below-normal consumer buying. The outlook for some time to come is a continuance of the current spread of prices between cotton and its wastes and by-products.

Low grade wastes such as picker and fly are awaiting a seasonal civilian pick-up in demand for stuffing and upholstery purposes. The best news about picker and fly is the announcement by WPB that the Government is to take over 100 per cent next season's first cut linters. This will practically eliminate the use of linters in the mattress trade and open the way for the substituting of picker and fly.

Cotton consumption in April made a gain of three per cent over March, moving to a new high record of 998,754 bales. From the waste angle this means so much more material to be disposed of in declining markets. The larger use of cotton was due in part to Government goods requiring combed yarns, from which an additional accumulation of the cotton noil may be assumed. In a broad way the cotton waste market has probably reached its bottom, both as to deflated values and lack of volume. Some time a little later the woolen industry will be seeking suitable wastes to eke out the short supply of wool while from another direction Government specifications on a variety of fabrics may be expected to put spinning stocks into a better selling position.

Some dealers are finding encouragement in the prediction of the Department of Agriculture that as the mills switch from light to heavy goods, there will be an increased use of low-grade cotton. It is at this point that strips may get a "look-in", for the better grades are cheap and of superior manufacturing utility to some low-grade cottons. In passing, the trade notes the trade agreement between the United States and Peru whereby Peruvian cotton having a staple of 1⅛-inch or more is reduced in duty from 7 to 3½ cents per pound. This long staple cotton is the principal export from Peru and averages around 370,000 bales annually.

New York spot cotton at time of writing is 21 cents, while the peeler comber is quoted 65 per cent and the peeler strip 60 per cent.

New Carborundum Representative

Raymond C. Clements has established headquarters at 1407 N. Tryon St., Charlotte, N. C., as representative of the Carborundum Co., of Niagara Falls, N. Y., covering the southern textile territory for this organization.

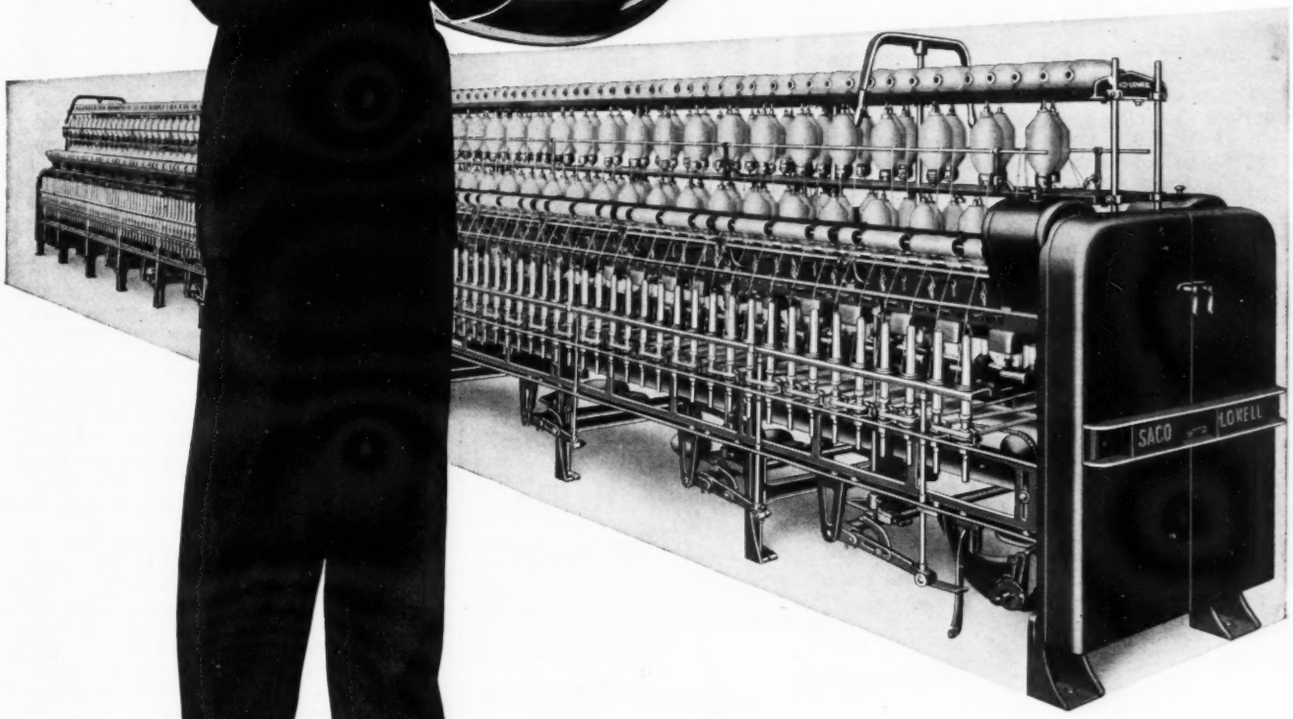
PAWTUCKET RINGS *Vitritex* FINISH

"..... our records show Real Savings and Better Production since installing Pawtucket Rings"

Pawtucket Rings are a distinct help to good spinning and high-speed production. In a ring "finish" is a vital factor . . . and the longer this finish is retained, the longer the ring will function efficiently and contribute to the maintenance of good spinning.

The finish on a Pawtucket Ring is something more than a burnished surface. This finish — called Vitritex — is highly resistant to wear and is so nearly nonporous as to be almost impervious to moisture and other corrosive elements circulating in the atmosphere of the spinning room.

We will gladly furnish sufficient samples on which you can make your own tests.



Pawtucket SPINNING RING CO.

(Subsidiary of Saco-Lowell Shops)

CENTRAL FALLS RHODE ISLAND

COMMENT on the COTTON MARKET

New Orleans, May 16, 1942

DEVELOPMENTS at Washington during the latter part of April kept the cotton market in more or less of a disturbed condition, reduced the demand for both spots and futures and unsettled values. The President's anti-inflation message to Congress was probably the most disturbing of these developments because of his unexpected request for a revision of the price control law and for authority to sell surplus agricultural products under parity. Values, however, turned upward on the first indication that the Farm Bloc might be able to prevent any change in the price control law and rose during the first week in May to within a few points of the former season's highs. The advance failed to hold owing to renewed efforts of the administration for a revision of the price control law and prices dropped about $1.50 a bale while absorbing the liquidation which followed this agitation.

Reports around the middle of May that the Farm Bloc and administration leaders had compromised their differences and agreed upon a program which would not affect cotton adversely stimulated demand for both spots and futures and caused another substantial raise in values.

Prices as this is written are only about a dollar a bale under the highest reached this season. May went off the boards on the 15th without disturbing values.

Another disturbing influence was the order of the OPA abolishing the sliding scale ceiling for textiles and freezing prices for all kinds of merchandise, including textiles, at the highest prices which prevailed during March. This order reduced sales of all kinds of cotton goods and induced many mills to withdraw from the spot and futures markets and look on, pending more light on how the freezing order would affect them. The price of cotton goods was frozen on the basis of an average price of 20.37 for raw cotton. The price administrator justified his adoption of the 20.37 cents by saying that mills have enough margin of profit to enable them to pay two cents a pound over that figure for their raw cotton. He was also quoted as admitting that cotton could go to 21.47 cents a pound on the farm before he could place a ceiling on that commodity.

In addition to the compromise between the Farm Bloc and the administration the principal uplifting influences were:

Raise in the parity from 18.35 in March to 18.72 in April. The Department of Agriculture admits that the March parity should have been 18.60 cents a pound.

The Crop Reporting Board reported that the loss from weevil in 1941 was the largest for many years. The loss in 1941 is given as 15.4 per cent of a normal, or full, yield. This compares with a loss of 6.5 per cent in 1940 and a ten-year average loss of 8.2 per cent. The loss in Georgia and South Carolina was given as 27 per cent, Mississippi 23, Louisiana 22, Alabama 20. Texas and Arkansas 11, North Carolina 10 and Oklahoma 8. Texas also suffered a loss of 11 per cent from floods and excessive moisture.

Reports of state entomologists of several states indicate as large, if not larger survival of weevil than in 1941. The Texas Bureau also reports leaf worm in the Rio Grande valley.

The New York Cotton Exchange service estimates that domestic mills will need 14,000,000 bales of our cotton next season. Other authorities estimate exports in excess of 1,000,000 bales.

Crop reviews tell of a late start with considerable losses in north-central Texas from recent heavy rains and floods. Some parts of this large area received 10 to 17 inches of rain during the latter part of April. The East needs rains badly as this is written. Temperatures were abnormally low.

Acreage forecasts indicate only a small increase in planting over last year when, according to revised estimates of the Crop Reporting Board, 23,132,000 acres were planted. The yield per acre in 1941 was 231.9 pounds compared with 252.5 in 1940. The 1941 crop was about 10,500,000 running bales.

Reports gathered by the Department of Agriculture show an average shortage of 36 per cent in the supply of labor in the cotton states. Some states show an even greater shortage which is expected to increase considerably by picking time.

The CCC will open bids on the 20th for the remnant of cotton which it is permitted by existing laws to sell in one year. This sale will probably round out its quota of 1,500,000 bales for this year. After this sale is completed the CCC is reported to be considering a plan to swap its more desirable grades for the less desirable grades held by private firms. The latest official statement shows that the CCC held 4,806,000 bales at the end of March.

The compromise agreement between the Farm Bloc and the administration, which is to be made a part of the Agricultural Appropriation bill now before the Senate, is reported from Washington as follows:

"None of the funds made available shall be used for administrative expenses connected with the sale of government-owned or government-controlled stocks of agricultural products at less than the parity price as defined by the AAA Act of 1938, provided further that the foregoing proviso shall not apply to the sale or other disposition of any agricultural commodity to or by the Agricultural Marketing Administration for distribution exclusively for relief purposes, nor to grain which has substantially deteriorated in quality or is sold for the purpose of feeding or the manufacture of alcohol, or commodities sold to farmers for seed and sales of cotton required in connection with the new uses program, provided further that not more than 125,000,000 bushels of wheat may be sold for feeding purposes."

Note: This agreement appeared to be on the way to enactment until a delegation of farmers from the grain states arrived in Washington for the purpose of protesting against the sale of wheat below parity. The results of this protest are not known as this is written.

Consumption of lint cotton during April amounted to 998,754 bales, the largest amount ever consumed in one month. These figures show that we are now on a million-bales-a-month consumption basis. Consumption for nine months aggregated 8,245,493 bales. Mill stocks total 2,631,889 while warehouse stocks, which include most of the cotton in the United States, have shrunk to 10,397,000 bales. This is a loss of nearly a million bales during the month of April. Warehouse stocks are now nearly 2,000,000 bales less than a year ago.

Detail of the Census report will be found in another column.

CENSUS REPORT OF COTTON CONSUMED AND STOCKS

Consumption of Lint

Bales—	This Season	Last Season
In United States, April	998,754	920,950
In United States, March	966,631	854,767
In United States, 9 months	8,245,493	6,992,591
In Cotton Growing States, April	840,854	776,686
In Cotton Growing States, 9 months	7,006,374	5,958,148
In New England States, April	118,827	116,059
In New England States, 9 months	983,862	830,511
In All Other States, April	31,073	28,205
In All Other States, 9 months	255,257	203,932
Mill Stocks		
In United States, April	2,631,889	1,935,365
In United States, March	2,651,614	1,912,750
In Cotton Growing States, April	2,115,659	1,557,734
In New England States, April	429,261	320,381
In All Other States, April	86,969	57,250
Warehouse Stocks		
In United States, April	10,396,962	12,369,365
In United States, March	11,352,967	13,244,740
In Cotton Growing States, April	10,018,066	11,995,471
In New England States, April	358,789	358,442
In All Other States, April	20,107	15,954
Active Cotton Spindles		
In United States, April	23,100,202	22,807,432
In United States, March	23,096,479	22,806,104
In Cotton Growing States, April	17,497,752	17,311,660
In New England States, April	4,966,880	4,979,872
In All Other States, April	635,570	515,900

SPECIAL

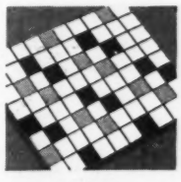
To Woolen and Worsted Manufacturers

WE INVITE YOU TO USE THIS

FOUR-PLY SERVICE!

1 FIBER RESEARCH. In our laboratories and pilot plants, scientists are constantly working to further perfect the types of rayon yarn and fiber now available, and developing special new types for specific purposes on all standard spinning systems; including the carpet, blanket, woolen, spun silk, Bradford and French worsted systems. Their latest contribution in the woolen field is "CROWN Tufton," a new type of viscose staple fiber specially adapted for floor coverings.

2 FABRIC DEVELOPMENT. A department to work with you in the design of successful fabrics—new fabrics which you can produce efficiently on your existing equipment – fabrics which combine the virtues of rayon and wool to produce the best possible effects. As a result of this cooperative research work, many successful rayon-and-wool blends have already been developed and others are on the way.



3 MILL TECHNIQUE. The Textile Unit—an experimental mill equipped with standard machinery for virtually every phase of textile production from fiber to finished fabric, to help you solve mill problems without tying up valuable plant capacity. Equipment includes standard spinning layouts, together with complete facilities for weaving, dyeing, and finishing.

4 SELLING POWER. CROWN Tested helps sell quality rayon fabrics every step of the way from raw material to ultimate consumer. Here is the way to establish and maintain the quality of your new fabrics containing CROWN Rayon, and at the same time, drive home to garment manufacturers and retailers the facts about these fabrics. Let us show you how this plan can help you.

Many woolen and worsted manufacturers are now discovering for the first time the interesting results which can be achieved with rayon staple fiber, used either independently or in blends with wool. New fabrics are appearing almost daily—in blends, weaves, and finishes made new by this versatile fiber. Amid this welter of new developments, questions are bound to arise—especially among manufacturers whose previous experience with rayon staple fiber has been limited.

It is to these new users of rayon staple fiber, as well as those who are employing it in new applications, that our FOUR-PLY SERVICE is devoted. Our ability to serve is based on the millions of pounds of fiber which we have been privileged to supply the woolen and worsted industry in recent years. Whenever you have a question involving rayon—from the properties of the fiber to the sale of finished fabrics—let us work with you toward a practical solution. We welcome every opportunity to assist you.

Copr. 1942—American Viscose Corp.

AMERICAN VISCOSE CORPORATION

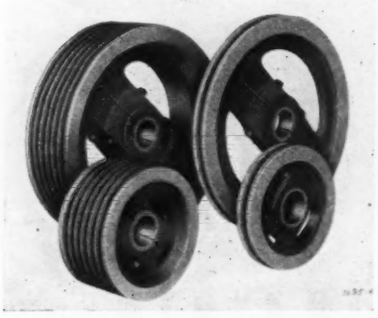
PRODUCERS OF CROWN *RAYON YARNS AND STAPLE FIBERS*

SALES OFFICES: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa. PLANTS: Marcus Hook, Pa.; Roanoke, Va.; Parkersburg, W. Va.; Lewistown, Pa.; Meadville, Pa.; Nitro, W. Va.; Front Royal, Va.

NEW EQUIPMENT and MATERIALS

Wood Sheave for V-Belt Drives

Dodge Manufacturing Corporation, Mishawaka, Ind., has developed the "Victory" wood sheave for v-belt drives as an alternate for metal sheaves. The sheave is of laminated construction, and the segments are of selected straight-grain kiln-dried hard maple; wood bushings are provided and provision is made for firm fastening to



shaft. The company states that the efficiency of this sheave is equal in every way to that of metal sheaves except where flywheel effect is essential.

It is pointed out that the introduction of this sheave makes it possible for users of v-belt drives to aid in the conservation of metals needed for the manufacture of vital war material, and it will also release, for other war production, equipment formerly required for the manufacture of metal sheaves.

These sheaves are available in composite groove types for "A" and "B" section belts in a full range of sizes, and for "B" belts in sizes from 5.4 P.D. to 38.0 P.D. up to 10 grooves, and for "C" belts from 5.4 P.D. to 44.0 P.D. up to 12 grooves.

◆

Patent on Bobbin Painting Machine

According to Eaton and Brown, patent attorneys, Charlotte, N. C., among recent textile patents granted include one to David A. Jolley and J. P. Scarborough, Kannapolis, N. C., on a machine for painting colored bands on bobbins, such as the tip of the bobbins. When a bobbin is placed on a spindle to rotate same, a paint brush automatically swings against the rotating bobbin to paint the stripe. When the bobbin is removed, the brush swings away so that bobbins can be painted rapidly; in fact, they can be painted just as fast as they can be placed on the rotating spindle and removed. This machine was fully described and illustrated on page 80 of the June 1941 issue of COTTON.

◆

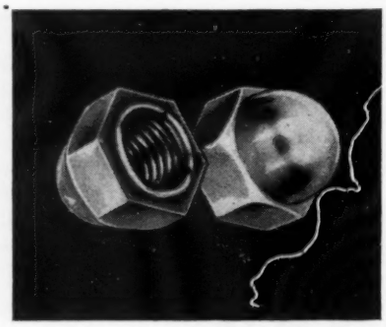
Constant Level Lubricator

Oil Rite Corporation, 3466 South 13th St., Milwaukee, Wis., have announced the new Oil-Rite constant level lubricator, which holds a visible reserve supply of oil, and releases automatically just as much as is needed to maintain a constant predetermined level of lubricant. The lubricator consists of three parts: the base is cast of Zamak metal, with an integral open air vent which extends part way up into the oil reservoir; over this vent is fitted loosely an inverted bucket or bell, also of Zamak metal; the reservoir proper is a glass dome, sealed to a metal collar by plastic porcelain cement which is impervious to acids, oils, water and heat. Two spring clips lock the oil reservoir in position.

◆

Cap Nut Shapes Now on Lock Nuts

An-cor-lox Division, Laminated Shim Co., Inc., Glenbrook, Conn., announce that cap (acorn) shapes are now available in An-cor-lox lock nuts. A wide choice of materials for the nut body



is available, also considerable variation in the metallic composition of the locking ring insert. As is true with all An-cor-lox nuts, the cap nuts are of all-metal construction and self-contained—the locking ring being made integral with the nut body, comprising a single-unit lock nut.

Automatic Oiler for Elevator Door Checks

Trico Fuse Mfg. Co., 2950 North 5th St., Milwaukee, Wis., have announced the application of Trico visible automatic oilers to replace oil cups on elevator door checks. This method of controlling oil supplies, it is pointed out, supplies only the correct amount of oil at the right time; the clear bottle tells at a glance when re-filling is necessary.

◆

Finger Guard on Work Gloves

Industrial Gloves Company, Danville, Ill., has re-designed the Steel-Grip individual finger guard so that this type of protector for the thumb and first two fingers has been incor-

porated into a single unit. The guard is made of wool felt, and is also available in chrome leather. In both types, the back is made of elastic webbing to assure a cool, comfortable fit. This new guard is designed for punch press work, buffing, grinding, etc., where protection is needed only on thumb and first two fingers.

◆

Finish for Cotton Lace and Mesh Hosiery

Burkart-Schier Chemical Co., Chattanooga, Tenn., has perfected a special finish for cotton lace and mesh hosiery—known as Hosiery Finish P-5. It is described as effective and economical; no special equipment is needed, and it is applied in the last bath. The new finish was designed to greatly improve the appearance of cotton hosiery, and it is reported that boarding and pairing are made easier, as the hosiery does not curl or wrinkle. The finish does not change the shades, and adds sales appeal to the cotton lace and mesh hosiery, the company points out.

HE NEEDS A DOZEN UNIFORMS... FAST!

How du Pont Research Speeds War Production

IT'S NO EXAGGERATION to say that a modern soldier needs a dozen uniforms. It's an understatement! An army of one million men requires as much cloth of all types as do 15 to 20 million civilians. And the army needs that cloth—*fast.*

Du Pont is helping to get uniforms for our Army and Navy with all speed. Of the millions of yards of cloth required, for instance, a tremendous amount must be bleached before dyeing. And out of du Pont research has come the greatest advance in bleaching in almost a hundred years. A new continuous bleach using du Pont peroxides changes grays to full white in 130 minutes compared with 8 to 14 hours for ordinary bleaching operations — saves time, power and chemicals. It's *fast!*

Again, in removing spinning oils and dirt from woolen piece goods, a du Pont solvent applied in a continuous process replaces lengthy washing with soap and water. Thousands of yards of woolens are degreased at the rate of a mile an hour — enough for ten uniforms every minute. That's *fast!* And the valuable oil can be saved for re-use.

To furnish dyes for uniforms, du Pont production of vat colors for military use has been increased 500% in the past three years and will be increased again this summer. Almost the entire output of these particular dyes was going into military goods by the end of 1941.

Du Pont is now supplying more than half of all the anthraquinone vat dyes used in cotton uniforms and about 30% of all dyes for wool uniforms. This peak production has been reached with unparalleled speed. *Fast!*

These and other du Pont developments and products have contributed materially to 'dressing' our growing Army and Navy—*fast!*

* * *

Behind all these contributions stands the du Pont Technical Service man. He is backed by 140 years of service to industry...140 years of experience in solving difficult problems. Call on him when you need help.

DU PONT
REG. U.S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO., (INC.) **WILMINGTON, DELAWARE**

Forced-Induction Pumps

Lincoln Engineering Co., St. Louis, Mo., are now producing forced-induction pumps known as the "Pile Drivers". They are designed to dispense heavy, viscous materials such as sealing compounds, insulating materials, etc., too heavy to prime in any other type of pump.

◆

Standard Covers for Anti-Friction Bearings

R-S Products Corp., 4530 Germantown Ave., Philadelphia, Pa. have developed standard covers, in a complete range of types and sizes, for forming a dust- and grease-tight closure to the housings for all ball and roller bearings. The manufacturers explain that these covers have the approval of all leading bearing manufacturers; that the saving in costly "nuisance" setups, reduction in designing, drafting, detailing and checking time, as well as the elimination of the costs of patterns, fixtures, gauges, etc., are among the advantages.

◆

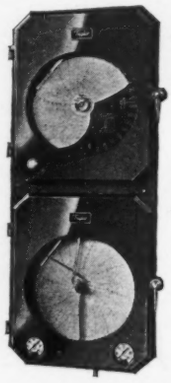
New Generic Term for Aralac

Lanara will replace prolon as the generic term for protein fibers such as Aralac, now being produced for fur and wool felt hats, textiles, and other purposes by Aralac, Inc., at Taftville, Conn. Lanara was derived from lana, which in the Latin means fleece or lamb's wool. "Aralac" will be continued as the trademark for lanara produced by Aralac, Inc.

◆

Fulscope Time Schedule Controller

Taylor Instrument Companies, Rochester, N. Y., have announced the new Taylor Fulscope time schedule controller, for maintaining exact temperature, pressure, flow or liquid level according to a predetermined time schedule. After the ideal processing schedule has once been determined, it is pointed out, it is possible with this new instrument to repeat the process



automatically and precisely as many times as desirable.

The cam and chart are individually mounted and conveniently located for instant visual comparison. Among the improved features of the instrument are: friction drive cam assembly which permits rotation of the cam without loosening any locking means; improved means of resetting one cam without disturbing the other in an instrument with two complete control mechanism; each cam capable of operating from one to four air valves, micro-switches or both for the actuation of any external mechanism such as a valve, bell or light, and do this automatically in any desired relation of one to the other; and the automatic return of the cam to the starting position.

◆

For pH Tests

R. P. Cargile, 118 Liberty St., New York City, has produced a buffer set with Hydrion wide-range pH test paper, for making pH tests by a very simple technique. Solutions of known pH, made by dissolving the tablets in the set, are applied to the test paper to bring out on the paper the color of any half unit from pH 3 to pH 11. The colors are used for reference to judge the pH of the sample being tested.

Attention, Proofers!

Are you having trouble making flame—and water-proof impregnating compounds, to meet U. S. Specification CCC-D-746? If so, it will pay you to investigate . . .

NEVILLE RESINS and PLASTICIZING OILS

RESINS
PARADENE*
R-16-A
R-33
NEVILLAC*

PLASTICIZING OILS
NEVINOL*
P.H.O.*

Paradene, R-16-A and R-33 Neville Resins and Nevinol are used in conjunction with Chlorinated Paraffin and Chlorinated Naphthalene.

Nevillac and P.H.O. are used in conjunction with Ethyl Cellulose 10 cps., and Chlorinated Paraffin.

• If desired, the resins may be supplied in solution form in various cuts with suitable solvents.

Write, wire or 'phone for further information and samples.

*REG. U.S. PAT. OFF.

T-1

THE NEVILLE COMPANY
PITTSBURGH • PA.
Chemicals for the Nation's War Effort

Is Your Mill

"WARP WISE?"

You are if you're using

NALEX

(formerly AMYLEX)

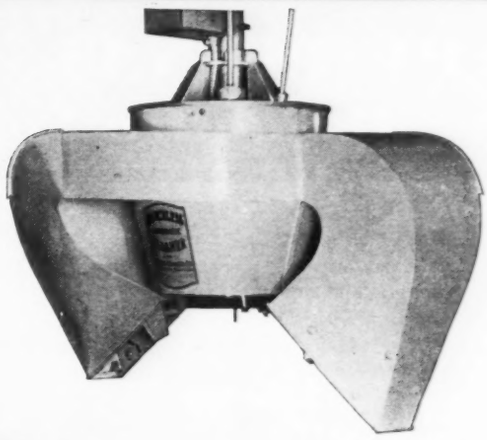
the Quick-Cooking, Slow-Congealing Starch Product Made Exclusively for Cotton Warp Sizing

- *For Better Warps:*
  - Strong Film Forming
  - Good Penetration
  - Smooth Yarn Surfaces
- *For Defense:*
  - Saves Tallow
  - Speeds Production
  - Conserves Labor & Material

NALEX is particularly recommended for fine yarns and fabrics

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET NEW YORK



SPINNERS

like traveling cleaners

With Parks Traveling Cleaners all installed and running, it often turns out that the spinners can take on more sides. They seem glad to.

Instead of working harder, these automatic mechanical devices have made their work easier.

Parks Traveling Cleaners are helping to make more and better textiles at less cost.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

JAMES L. TRUSLOW, northern agent of Whitin Machine Works, Whitinsville, Mass., has accepted a commission as Lieutenant Commander in the naval reserve force for the duration of the war, and is stationed in Washington, assisting the Navy Supply Corp. in its

Commander Truslow

contacts with textile mills. Commander Truslow has been connected with the Whitin Machine Works since 1923; his work has been mainly on machine development and mill advisory problems. He is the holder of a number of patents and has played a considerable part in the introduction of long draft spinning, and long draft, interdraft, and superdraft roving in this country.

BENJAMIN CONE, of Greensboro, N. C., treasurer of Cone Export & Commission Co., has accepted a commission as lieutenant in the naval reserve. His position with the company has been assumed by his brother, CEASAR CONE II.

CHARLES A. NEW, formerly production manager of Judson Mills, Greenville, S. C., who began active army service on March 24, 1941, has been

Major New

promoted from captain to the rank of major. Major New is plant protection officer on the staff of Colonel James R. Alfonte, Fourth Corps Area Quartermaster, with headquarters in Atlanta, Ga. Major New is a graduate of Clemson College, and had been with Judson Mills since 1927.

L. R. PITTENGER has been promoted from second hand to overseer of carding at the Alexander City (Ala.) plant of Avondale Mills. He has been with the organization for a number of years, and succeeds B. D. SNOW.

D. H. KENNEMUR, JR., overseer of dyeing, Renfrew Bleachery, Travellers Rest, S. C., has joined the armed forces as first lieutenant in the active infantry reserve on a limited service basis, reporting to Camp Tyson, Tenn. He received his commission at Clemson College in 1933, where he received the B. S. degree in textile chemistry and dyeing. He is a member of *Phi Psi*.

J. D. Ross has resigned as vice-president of the Bank of Randolph, Asheboro, N. C., to accept an executive position with Burlington Mills Corp. He will continue to reside in Asheboro.

R. S. DAYAN, of New York City, has been elected a vice-president of Jennings Cotton Mills, Lumberton, N. C. He and his brothers recently purchased a majority of the stock of this corporation. Mr. Dayan has moved to Lumberton. No other change in the officers of the mill was made. K. M. BIGGS is president, D. W. HUNTER executive vice-president, and A. M. HARTLEY secretary-treasurer.

W. H. KIRKPATRICK has become southern sales manager of Warner Chemical Company, with headquarters at 804 Woodside Bldg., Greenville, S. C. He succeeds P. F. TINSLEY, who has joined the armed forces.

E. V. WILSON, of Watson-Williams Mfg. Co., Greenville, S. C., has joined the armed forces, and is succeeded at Greenville by WALTER A. DABOLL, from the company's home office.

H. LLOYD BEACHAM has resigned as superintendent of the Houston (Texas) Cotton Mills, to accept a similar position at the Kingsville (Texas) Cotton Mill, where J. G. FLOOD is overseer of weaving and master mechanic, R. W. (BILL) THOMPSON is overseer of spinning, twisting and winding, and G. C. BRYANT overseer of carding.

WALTER GOSNELL, JR., has become assistant superintendent at the Beaumont Mills, Spartanburg, S. C. He was formerly overseer of carding at Laurens (S. C.) Cotton Mills.

W. LEXIE DAVIS, formerly at Proximity Mfg. Company, Greensboro, N. C., and more recently with Edna Mills Corp., Reidsville, N. C., is now engaged in special research work at Carter Fabrics Corp., Greensboro, N. C.

J. P. HOLDER has become overseer of carding at Mississippi Cottons, Inc., succeeding E. J. CARTER, who is now night general overseer. Mr. Holder was formerly at Callaway Mills, LaGrange, Ga.

Obituary

G. W. BOST, 52, overseer of the cloth room and finishing department, The Salisbury Cotton Mills, Salisbury, N. C., passed away suddenly on May 8 following a heart attack. Survivors include Mrs. Bost, two children, four brothers and two sisters.

ROBERT F. VOGT, chief consulting engineer of the Allis-Chalmers Mfg. Co., Milwaukee, Wis., since 1937, and an employee of the company for 36 years, died in April after a week's illness.

J. LANDER GRAY, SR., 62, president of Norlina (N. C.) Cotton Mills and one of Gaston County's best known textile manufacturers, died unexpectedly in April. He formerly was a vice-president and general superintendent of Textiles, Inc., and was for years general superintendent of the Gray-Separk group of mills.

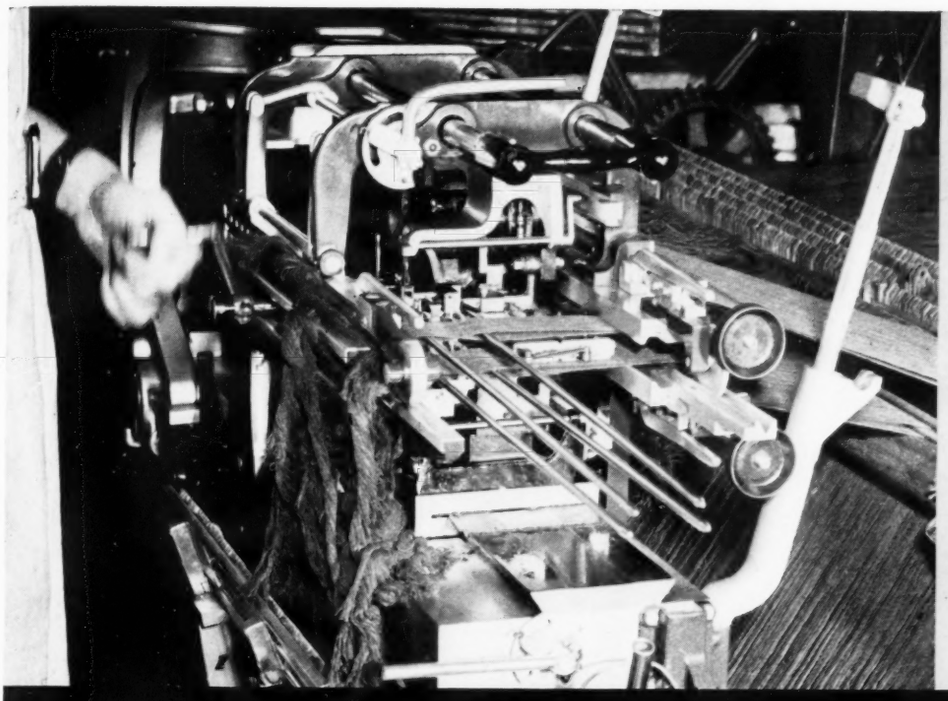
JACK KUGELMAN, 50, president and founder of the Artcraft Silk Hosiery Mills, Philadelphia, Pa., passed away recently.

GEORGE F. DICKSON, 55, president and general manager of Minneapolis (Minn.) Knitting Works, passed away in May. He was a former president of the National Association of Hosiery Manufacturers.

E. B. RICE, 62, president, Blair Mills, Belton, S. C., passed away in Belton recently after a six-weeks' illness.

H. L. MARLOWE, 48, sales engineer for The Texas Co., passed away in Charlotte in May following an extended illness.

LOUIS W. GREEN, 75, passed away in May. He had been with the dyestuff division of duPont for 23 years until his retirement a year ago.



BARBER-COLMAN

Portable

WARP TYING MACHINE

MODEL "LS"

WOOL WARPS...TIED IN AT THE LOOM

LOW COST WARP REPLENISHMENT - HIGHEST QUALITY RESULTS

The upper picture shows the Model "LS" Warp Tying Machine in action on a "bite", or portion, of a wool warp. In the lower picture, the bite has been completely tied and is about to be cast off. Note the next bites separated, ready to be put in the machine, which is fully portable and operates in the narrow alley directly behind the loom.

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OUT ON A LIMB?—

NOT WHEN YOU DEPEND ON Daycos

When you depend on Dayco Tempered Roll Coverings for more production of *more* uniform yarn—you're never out on a limb. Even when the thermometer soars to record heights, these all-season Daycos won't let you down. Their improved drafting is not affected by temperature extremes. So, when the heat's on this summer, depend on Daycos' proper coefficient of friction, which is inherent in their materials, to reduce ends down and lapping up to the very minimum. Daycos won't flatten, distort or groove—won't leave you out on a limb when you need more uniform yarn production with less "down time" at lower-cost-per-month-of-use.

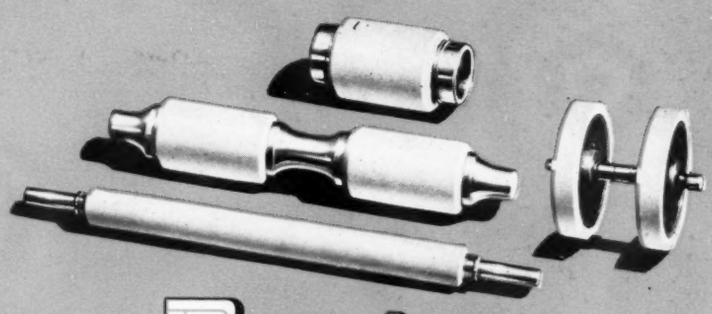
THE DAYTON RUBBER MFG. CO.
TEXTILE PRODUCTS DIVISION,
DAYTON, OHIO WAYNESVILLE, N. C.
The Originators and Pioneers of Dayco Tempered Roll Coverings

GREENVILLE SALES OFFICE
Woodside Building . . . Greenville, S. C.

EXPORT DIVISION
DAYTON RUBBER EXPORT CORP.
38 Pearl Street, New York, N. Y., U. S. A.

HERE'S WHY—
DAYCO TEMPERED ROLL COVERINGS ARE THE No. 1 CHOICE OF AMERICA'S TOP-FLIGHT TEXTILE MILLS

1. Improved drafting.
2. No grooving—less ends down.
3. Unaffected by temperature changes.
4. Lower net roll costs.
5. Long service life.
6. Easy to apply.
7. Proper cushioning.
8. Not affected by hard ends.
9. Static free.
10. Oil resisting.
11. One piece tubular construction.
12. Produce more uniform yarn.



Dayton
Thorobred TEXTILE PRODUCTS
Dayco TEMPERED ROLL COVERINGS—LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

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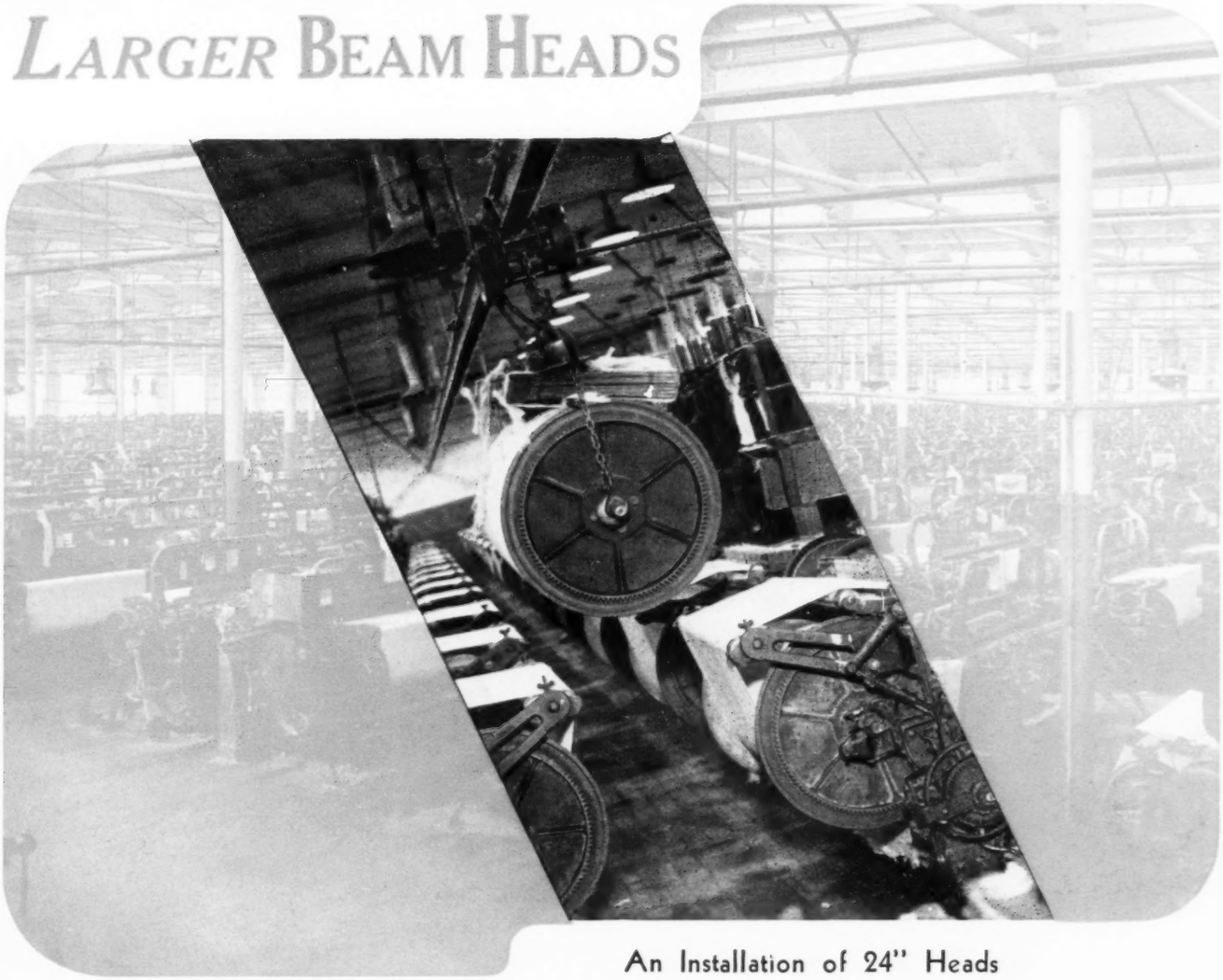
LARGER BEAM HEADS



An Installation of 24" Heads

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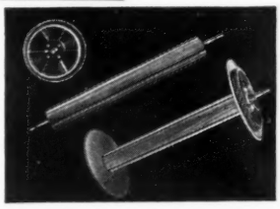
Other QUALITY Products

GEARS . . . Gears of all types —noted for their efficiency and durability.

LOOM BEAMS AND BEAM-BARRELS . . . West Point loom beams and beam-barrels are superior in their operation and economy.



Money invested in equipping your mill with larger beam heads will bring good returns.

More yarn can be put on beams with larger heads. "Run-outs" on the looms are less frequent. Beams are not handled as much, saving in the labor costs of slashing, warp tying, and placing warps in the loom.

Waste is reduced at both the slasher and the loom. Loom efficiency is increased, because looms run longer with less time out for changing warps.

Also manufacturers of special textile machinery, slasher equipment, and textile repair parts.

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SONOCO hits stride in war production

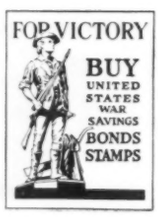
For the second time in 25 years SONOCO is turning on the heat for Uncle Sam.

We are turning out a dozen different war items in three plants—and in Canada.

We are much better prepared than in 1917—ten times better.

Our vital production of paper carriers for the textile industry has been increased 20% since December 7th.

On the war front, on the home front, on the civilian front, we are meeting all demands expected of a dependable source of supply.

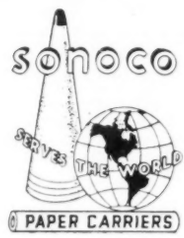


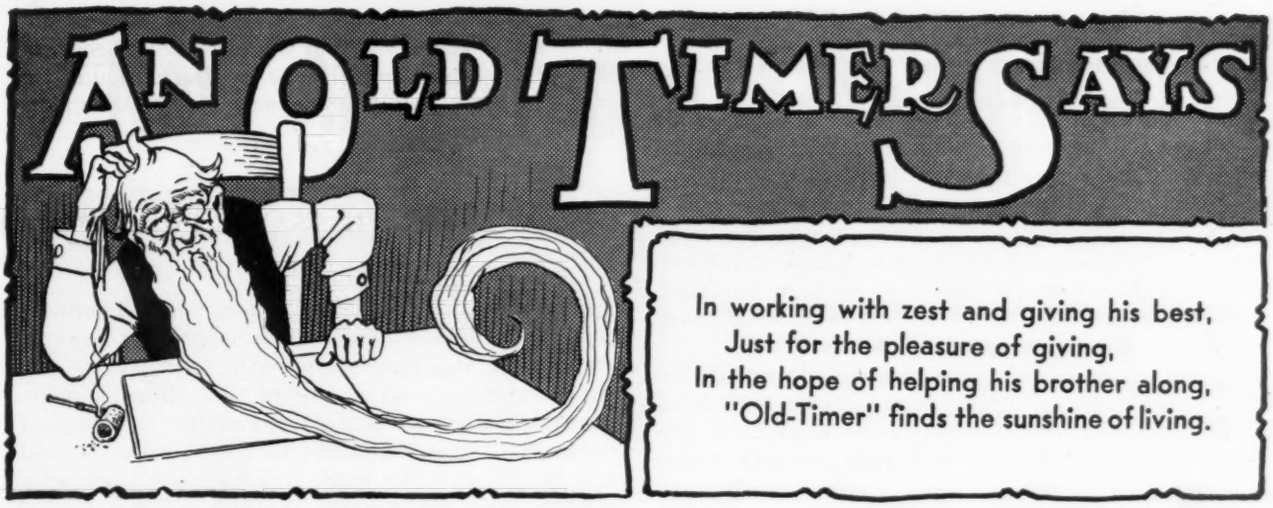
SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

SONOCO PRODUCTS COMPANY

BRANTFORD ONT. | HARTSVILLE S. C. | MYSTIC CONN.

DEPENDABLE SOURCE OF SUPPLY




AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Which is the Top Side of a Piece of Cloth?

QUITE OFTEN the question arises, when looking at plain 2-harness goods, which is the top-side of the cloth? Yeah, we have heard some few people claim that they could tell by simply looking at the cloth or by feeling of it (the hand). But at best these ways are for the most part pure guesses. Sure they will hit sometimes, but no one can be absolutely certain that what they claim is the top side really is.

I heard one mill man (and he is a pretty prominent mill man, too) say that he would wager a two-to-one bet that 90 per cent of the overseers and superintendents could not be absolutely sure they were correct in judging which is the top side of a piece of plain cloth. That is a pretty broad statement and his percentage may be high, but upon inquiry of OLD-TIMER for the past several weeks he has not as yet found even one overseer or superintendent or finishing plant man or commission house man who could explain any definite method by which a person can be certain he knows which is the top side of a piece of plain cloth, meaning, of course, the side you see when looking at the cloth while it is being woven in the loom.

Well, how's this for a method of determining the top side of a piece of plain (2-harness) cloth: First look for the "bow" in the filling. On the loom the "bow" is toward you when you are standing in front of the loom.

Next, examine the selvages for filling changes. If you find where the temple has cut off the filling you know that is the right-hand selvage.

Now, place the cloth with the "bow" toward you and place the right-hand selvage to your right and you will be looking at the top of the cloth as it was woven on the loom. When I say "place the cloth with the 'bow' toward you", I mean this:

The filling, in all the styles of cloth we are familiar with, does not lie in a straight line across the cloth. It is curved, and the direction of the curve is always toward you when facing the loom. That is, the ends of a pick of filling at the selvage will be farther from you than that pick of filling is in the center of the cloth—the filling is curved or bowed.

Another way to say it is: Everyone is familiar with the bow and arrow we used when boys. Well, the wooden part was the bow and if you laid one of these bows down on a table with the wooden bow toward you and the straight string which is attached to each end of the bow fartherest from you, you would understand what we mean by having the "bow" of the filling being toward you. A pick of filling is "bowed" like the wooden bow.

Yes, I heard your question: Suppose you can't find on the selvage where the temple has cut off the filling? O. K., then you must have a good pick glass or other magnifying glass to look at the selvage to determine how the outside warp thread interlaces with the filling. The filling should be *over* the outside warp thread on the right side of the loom and *under* the outside warp thread on the left side of the loom. That is, of course, if the warp has an even number of ends, which all plain warps should have if the warp is drawn in properly. The explanation is that all warps are drawn in right-to-left. That is, the first thread is drawn in the back harness from the right side of the warp and the last warp end will be drawn in the front harness on the left side of the warp. Therefore, you have a definite way of determining which is the right selvage and which is the left selvage.

If you do not have a pick glass or other magnifying glass handy, you can ravel out a few picks and see with the naked eye whether the outside warp thread has the filling over or under it.

If you should find the filling interlacing with both the outside warp ends in the same way you will know there is something wrong. Either the weaver has drawn in a loose end on the outside of the selvage, which should never be done, or the warp has an uneven number of ends (and all plain warps should have an even number of ends) or some such unorthodox thing has happened. Anyway, you can determine if the sample being inspected is woven correctly or not, and if incorrectly woven, simply examine another sample. In most cases, however, you can find filling changes which show a slightly heavy or thin place that will make it easy to determine both the direction of the bow and which is the right-hand selvage.

Any of you fellows got a better method?

A Recollection and a Prediction

YEARS AGO, when it took all day to visit a town 25 miles away and return the same day, back when if you wished to make such a trip mother would fry a chicken the night before or fry it while cooking breakfast about 5:00 o'clock that morning and Dad would put nine ears of corn and a bundle of fodder in the back of the buggy—then with lunch for both man and beast you set out before sun-up to "go to town"—

You took a dollar to that town and that dollar probably went direct to some manufacturer to replace, in the store where you spent it, more goods of the same nature. A dollar did not pass through many hands.

Today, you take a dollar to Atlanta, Ga., and someone from there takes it to Gainesville, Ga., and someone else takes it to Greenville, S. C., and someone else to Charlotte, then to Greensboro, and from there it goes to Danville, Va.,—and so on indefinitely. One dollar has paid a debt or made a purchase in six or twelve or a hundred towns, where 40 years ago it went only to one town. A dollar now is worth ten dollars or possibly a hundred dollars in comparison to that same dollar's worth 40 years ago.

Now, that is what we call progress, fellows, and practically all of that has been brought about by the speed-up in transportation. Where it formerly took Dad and the old mule a day to take his dollar to one town, that dollar today will go to probably six towns or more and maybe wind up back in the same town it started from, but it has been worth a dollar in every town it has been to. The deduction is that quicker, speedier transportation means more progress, not more dollars in circulation, but the circulation of the same dollars we have has been speeded up.

Then it looks to an old-timer that when this war is over and if we survive with a democracy—a democracy which will still allow a human being to show his initiative, his inventive genius, his desire to "beat the other fellow", and above all his desire to progress, and with all of these airplane factories equipped to turn out planes by mass production which will of course mean they will be within reach of the average business man's pocket-book—

Well, you young fellows will see that dollar we have been talking about doing about double duty to what it is today and we will then enter a new era of progress similar to those eras of progress which might be attributed first to the railroads and turnpikes which enabled the horse, mule and ox-driven wagons to go more places—then to the automobile and hard-surfaced roads which made an even greater step forward—and now watch and see what Mr. Airplane will do.

And as we seem to be in a predicting mood we firmly believe that some smart and practical inventor will do something to an airplane which will enable a pilot to set it down without the risk he has to take in landing today at 50 to 100 miles per hour. It would not surprise us at all to see certain types of planes equipped with small inexpensive engines with only sufficient horse power to gain altitude, then that engine would be cut off and the plane would soar, or glide, or whatever you call it, to the destination of the journey and sit down with no more trouble than stopping an automobile.

Now you tell one!

The Roots of Inflation

(*Continued from page* 58)

gasoline a week if the filling stations will sell them all they want. It takes rationing to keep down gas consumption or sugar consumption or money consumption or any other kind of consumption. Money is merely another form of sugar or gasoline or shoes or clothes, and it is ridiculous to try to ration a part of these things while exercising no control whatever over the money which purchases them. Of course, some control is being exercised, but it is back-handed control by taxes which hit the just and the unjust alike. The drastic income taxes not only take away the unearned wages of those who are making many times what they can justifiably earn, but also crush those who are making less on account of the war, instead of more. It is perfectly fair to tax well-to-do people until even the wealthiest man would only have $25,000 a year left if that is necessary for the prudent management of the war, but it is a cruel injustice to so tax a man whose proven abilities in good times and bad times have shown that he is capable of earning $100,000 or $500,000 a year, if the money taken away from him is to be tossed casually to a bunch of incompetents and former loafers merely because they happen to be working in a munitions factory.

One of our most precious assets in this war is unanimity of purpose and the presentation of a unified front to our enemies, and it is going to be hard to preserve this spirit of unanimity in a plant which has experienced craftsmen in one end of it earning one-half or one-third as much money as the green apprentices in the other end who happen to be on the Government payroll. After all, it is the experienced craftsmen who have made this Government payroll possible and who are going to have to pay the bill when the war is over.

The way to prevent inflation is to prevent it, and not try to head it off after it gets started. We must dig up the roots while they are small and easily controlled.

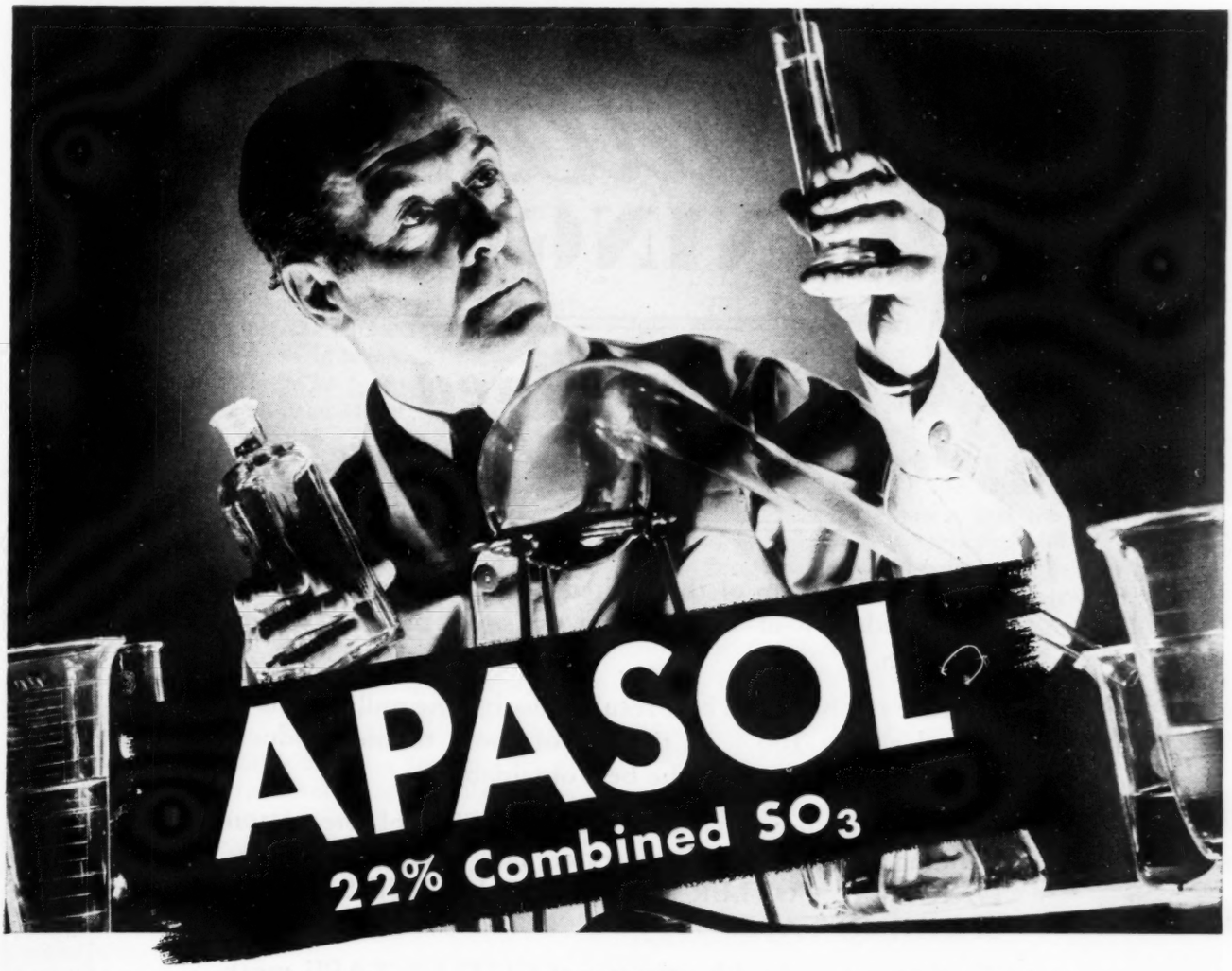
Designers, Analysts, and Technicians Meet

The regular May meeting of the Textile Designers, Analysts and Technicians Association was held in the Wamsutta Club, New Bedford, Mass. Peter C. Wayner of the Giltedge Textiles Inc., was chairman of the meeting, which was attended by 50 members and guests.

The speakers were two representatives of the Owens-Corning Fibreglass Co., who talked on the various uses of fibreglass. Joseph C. Clement, Jr., of Cambridge, Mass., discussed fibreglass in the insulation, air filter and storage battery fields. J. L. Tucker, Providence, R. I., discussed fibreglass in the textile field and conducted a lengthy question-and-answer period. A wide variety of samples showing the various forms and uses of fibreglass were on display.

After the meeting, the officers and executive committee, presided over by Leo P. Chabot of Pepperell Mfg. Company, president, decided to suspend the regular activities of the association for the duration of gasoline rationing.

A New All Purpose Sulphonated Oil



AFTER a long period of research and development, Jacques Wolf & Company offers APASOL, a highly efficient commercial oil for use in all wet processing of natural and artificial fibres.

Besides unusually high solubility, APASOL has a wide range of features to help your dyeing, bleaching, printing and finishing . . . APASOL assures complete penetration, has effective softening action. It is resistant to organic and inorganic acids and salt solutions (lime, Epsom and common salts).

APASOL brightens shades in dyeing—imparts a soft hand to cotton fabrics, makes artificial silks easier to wind and void of stickiness. In pasting colors, APASOL affords fine dispersion of naphthol and vat dyes.

APASOL gives you low cost efficiency in every wetting process:

Desizing—APASOL is a preliminary wetting agent.

Kier Boiling—APASOL aids emulsification of soaps, solvents, soluble oils.

Bleaching—APASOL acts as a stabilizer and softening agent.

Dyeing—APASOL assures thorough wetting out and absolute penetration.

Soaping after dyeing—APASOL is an efficient dispersing agent, prevents formation of lime soaps.

WRITE TODAY FOR A GENEROUS FREE SAMPLE

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JACQUES WOLF & CO.

Chemicals **PASSAIC, N. J.**

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.

Cutler
SPINNING TAPE

Streamlined for Power Saving!

The War Program of the United States demands from the textile industry of the country no small measure of co-operation.

In order to obtain the best results possible the mill men have turned almost 100% to the use of those textile products which are known to be the best obtainable.

Our records show that approximately 75% of the cotton spinning spindles of the country are now equipped with the ORIGINAL CUTLER PATENTED POWER-SAVING SPINNING TAPE.

The savings realized by the use of CUTLER TAPE speak for themselves and, in keeping with the spirit of the times, they might well be interpreted as saying:

"Millions for Defense but Not One Cent for Inferior Spinning Tapes!"

ROGER W. CUTLER

BOSTON, MASS. GREENVILLE, S. C.

Southern Representative:

M. BRADFORD HODGES

P. O. BOX 752 ATLANTA, GA.

HOW OTHER MEN MANAGE

Higher Card Speed

Some Opinions on the Effects of Speeding Up the Card Cylinder, the Licker-in, and the Doffer. What is your experience? . . .

EDITOR COTTON:

The effect of increasing card speeds as to the strength of the yarn, and whether or not the licker-in should be stepped up if the doffer speed is increased, and what if anything should happen to the settings if such a speed change were made, were asked by "CONTRIBUTOR NO. 7350" on page 144 of the April issue of COTTON. I would like to offer my experience in changing the doffer speed on a card from 6 to 9 r.p.m. to increase the production, and also speeding up the licker-in from 400 to 600 r.p.m., to try to get the same cleaning at the licker-in as was secured at the lower production.

We have some cards running 6 r.p.m. at the doffer which gave me an opportunity to try out this experiment as suggested by "CONTRIBUTOR NO. 7350". The move was accomplished by reducing the size of the licker-in receiving pulley. Speeding the licker-in up to 600 r.p.m. automatically increased the doffer speed to 9 r.p.m., as the doffer is driven from the licker-in. This card was run for several days at this speed and the results obtained were noted.

First, we noticed a decided difference in the appearance of the web at the doffer. It did not look nearly as clear nor as clean. Examining the card sliver seemed to bear out our opinion of less cleaning being done.

Analyzing what really happened when this change was made, we find that the feed roll on the card at 6 r.p.m. has a surface speed of 6.09 inches per minute on one well known make of card.

$$\frac{6 \times 45 \times 23 \times 2\frac{1}{4}\pi}{45 \times 160} = 6.092 \text{ inches}$$

while at 9 r.p.m. the feed roll has a surface speed of 9.05 inches per minute.

$$\frac{9 \times 45 \times 23 \times 2\frac{1}{4}\pi}{45 \times 160} = 9.05 \text{ inches}$$

We also note that the surface speed of the 9-inch licker-in at 400 r.p.m. is 12,257 inches per minute while the licker-in running at 600 r.p.m. has a surface speed of 18,371 inches per minute. This indicates that while one inch of lap is being fed at the slower doffer speed, 2,012 inches of licker-in surface are passing the end of the lap. $12,257 \div 6.09 = 2,012$. At the higher doffer speed, 2,029 inches of licker-in surface are passing the end of the lap fed. $18,371 \div 9.05 = 2,029$. For all practical purposes we can say the number of licker-in teeth coming into contact with the cotton fed is the same.

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

◆

But the fact that we have practically the same number of licker-in teeth penetrating the cotton fed under both conditions doesn't mean that the results will be identically the same. The licker-in, by its action, combs the amount of cotton fed to it. As there are only about 32 teeth to the square inch in the licker-in, plus the fact that fibers do not all lie parallel, we are compelled to recognize that the cotton is not detached from the lap as separated individual fibers, except occasionally, and therefore it is delivered to the next organ, the cylinder, in very small groups or tufts.

The accepted speed for a cylinder on a 40-inch revolving flat card is 165 r.p.m. The surface speed of a cylinder at this speed is 26,174 inches per minute. $165 \times 50.75\pi = 26,174$. At the lower production, where the licker-in speed is 400 r.p.m., the surface speed of the cylinder is 2.13 times greater than that of the licker-in. $26,174 \div 12,257 = 2.13$. Where the card has a licker-in speed of 600 r.p.m., the surface speed of the cylinder is 1.42 times greater than that of the licker-in. $26,174 \div 18,371 = 1.42$. This shows that there is more cotton going onto each square inch of cylinder wire at the higher productive speed than there is on the card with the lower production. It means that we are doing less carding between the cylinder wire and flat wire, plus the fact that the difference in surface speed between the cylinder and doffer is quite different in each case. We are introducing cotton into the section of the card where the carding is really accomplished, between the cylinder and flats, at greater speed and imposing added work on the points of the wire which should be considered.

In other words, the thought in speeding up the licker-in may make it possible to get the same combing of the lap in each case, but it is risky business and I do not advocate such practice. A speed of 600 r.p.m. on a licker-in will be the cause of greater fiber damage than that of the lower speed, especially on the longer staple cottons. Consideration must be given to the type of teeth in a licker-in. The licker-in is covered with metallic serrated teeth, and as previously stated, with approximately 32 teeth to the square inch. If the teeth get dull or bent or broken they introduce the cotton into the cylinder in a very poor condition for satisfactory carding. I believe this condition is aggravated with the higher speeded licker-in. We all know we should always keep the licker-in in good condition, but its position in the card makes

it possible to be damaged easily.

One might ask the question of why not speed up the cylinder to accommodate the increased production. In a paper written by one of the faculty of Shirley Institute in England several years back, a series of tests made at varying cylinder speeds was described and the conclusion arrived at was that the standard speed of 165 r.p.m. gave the best all-around results.

With a 27-inch doffer, about 50 inches of cylinder pass an inch of doffer when the doffer is running 6 r.p.m., while at a speed of 9 r.p.m., 33½ inches of cylinder pass an inch of doffer per minute. The result is that with the slower doffer speed there is a better chance to condense and deposit a more uniform web on the doffer. With the higher doffer speed the cotton is taken away faster and many fibers remain on the cylinder. The centrifugal force of the cylinder causes these fibers to stand out. Many are removed by the screen but many continue on and reach the point at the licker-in where the new cotton coming into the card meets it and the result is these fibers not stripped off at the doffer become embedded in the card wire which causes loading of the cylinder and less effective carding action by the cylinder wire. Too, the loading of the cylinder quicker is a cause of an increase in neps. The stripping frequency has to be increased in many instances.

As to whether the settings should be opened or closed with the higher speed, I cannot answer the contributor on this because I do not know what his settings are. I will give my settings as follows:

Feed plate to licker-in	.010	
Licker-in to cylinder	.007	
Mote knives, top	.012	Angle 21 degrees
Mote knives, bottom	.010	Angle 21 degrees
Flats to cylinder	.010	
Doffer to cylinder	.007	
Doffer comb to doffer	.012	
Front knife plate to cylinder, top	.029	
Front knife plate to cylinder, bottom	.017	
Cylinder screen to cylinder front	1/16"	
Cylinder screen to cylinder, center	.054	
Cylinder screen to cylinder, back	.029	
Back plate to cylinder, top	.022	
Back plate to cylinder, bottom	.017	
Licker-in screen at nose	1/16"	

If I went to the higher production I would have the settings remain just as they are.

With the higher production I would look for about a pound less break. This has been our experience on a test conducted sometime ago.

In conclusion, I will say that quality carding cannot be obtained by speeding up as the contributor suggests. The speed or production of a card depends on the product being manufactured. Many times cards can be speeded up to decrease cost and still make a satisfactory piece of goods. This can be determined by test. But where quality is desired and tests indicate that no chances can be taken with the product being made, speeding up cards is bad business.

CONTRIBUTOR NO. 7351

EDITOR COTTON:

Replying to the question propounded by "CONTRIBUTOR NO. 7350" with reference to the effects of increasing card speeds.

In answering this question, certain assumptions must be made. If the only changes made on the card is to change the doffer speed, from 6 to 9 r.p.m., then there is an increase of 50 per cent. The weight of stock delivered to the feed roll is doubled and consequently, to obtain the same number of penetrations per inch of lap, and to retain the same weight of cotton per unit of licker-in surface, the licker-in speed must be increased in the same production.

Practice, experience and observation has developed the following formula as the standard licker-in speed: Pounds per hour carded $\times$ 42.4218 = speed of licker-in.

With no change of the card, except that in the doffer driving gear, the production, when the doffer is raised to 9 r.p.m. from 6 r.p.m., will be increased 50 per cent; therefore, the licker-in must be increased in like ratio which will bring the licker-in speed from 400 up to 600 r.p.m.

This higher licker-in speed, on account of the higher velocity of the air currents created, will increase the weight of licker-in fly and this increase will consist of the longer staples.

Changing the settings will not have very much effect on controlling the emission of white staple. If the screen is opened up, the loss of spinnable fiber will increase; if set too close, efficiency in cleaning will be lowered. The happy medium of maximum cleaning and minimum fiber loss must be determined by experiment.

The yarn strength, according to the interpretation of the latest but as yet incomplete research on this subject, will not be changed to any appreciable amount, provided the licker-in is true, the wire sharp, and the feed plate setting correct.

CONTRIBUTOR NO. 7355

Loom Fixing Notes

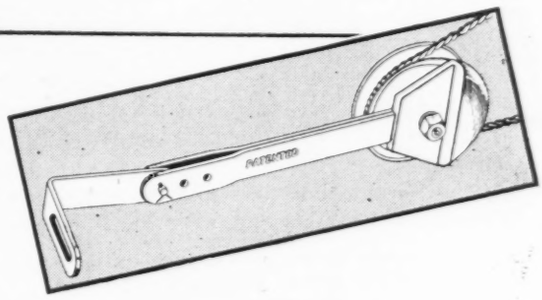
Causes for Filling Breaking

1. Tender yarn.
2. Too much or not enough tension on the filling.
3. Bad quilling, knots, loops, long ends, etc.
4. Too much or not enough play for shuttle in the shuttle box.
5. Shuttle rebounding.
6. Shuttle not furred properly.
7. Cut or badly worn tension rings in shuttle.
8. Shuttle has sharp edges or is badly worn.
9. Race plate in shuttle box worn or split.
10. Shed closes early or late.
11. Filling fork is sharp, prongs too long or short.
12. Filling fork touches rake.
13. Filling fork prongs are too heavy or the fork is heavy.
14. Porcelain eyes in the shuttle are broken or cracked.
15. Too much pick.
16. Unsteady oscillation of the lay.
17. Boxes are set higher or lower than the level of the lay.
18. Binders or swells are worn or bent out of shape.

In Your Interest of Conservation for Defense

Your Mill

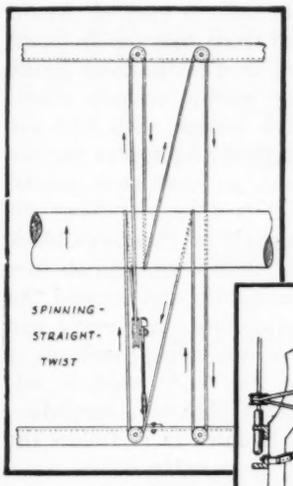
Can meet government specifications requiring uniform yarns. Uniform spindle speed can be obtained on your present band driven frames equipped with . . .



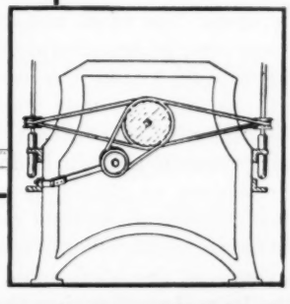
MEADOWS Tension Pulleys

Equip Your Band Driven Frames with the Equivalent of Tape Drives at a Fraction of the Cost

• *M-R-C Lubri-Seal Ball Bearing—deep-grooved, accurately ground and hardened. Fully protected against dirt and lint.*



• *Ease of installation is illustrated here. Only one 5/16-inch hole must be drilled through spindle ladder on bottom rail, to install one pulley for every four spindles.*



- **You'll get uniform twist—all the time, without soft or slack yarn caused by band slippage.**
- **Weather conditions won't affect band tension.**
- **These Tension Pulleys can be installed without doffing the frames.**
- **Installation of one pulley takes care of four spindles.**
- **Lubrication of these units is necessary only once a year. They are prelubricated and sold unconditionally guaranteed for a full year.**
- **Sturdily built, precision balanced, and with adjustable brackets, these pulleys will pay dividends under present conditions.**
- **Over 125,000 units, serving more than a half million spindles are already in operation.**

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Mechanical and Actual Twist in Warp Yarn

EDITOR COTTON:

"CONTRIBUTOR No. 7316" poses quite a question when, in asking about a 14s yarn, he asks what should be the per cent difference between the calculated yarn twist and the actual twist as found on the twist counter. His question appeared on page 93 of the January 1942 issue.

I have run a short test on a 15s warp yarn in order to establish my basis and offer the following:

TWIST BY TWIST COUNTER ON 15s WARP
Ten Bobbins Tested (Twist Per Inch)

Bobbin	Minimum	Maximum	Average
1	18.4	21.1	19.27
2	17.6	18.7	18.13
3	18.5	19.7	19.11
4	16.5	17.6	17.25
5	18.4	19.5	18.97
6	18.0	20.2	19.17
7	18.8	19.5	19.05
8	17.7	19.1	18.34
9	17.7	19.1	18.07
10	16.7	19.0	18.22
	Average Tw. Per Inch		18.56
	Percentage Variation Between Bobbins		10.9
	Percentage Absolute Variation		24.7

The mechanical twist by twist gearing was found as follows:

102 Front roll gear
126 Jack gear
37 Cylinder gear
7.02 Ratio cylinder to whorl
41 Twist gear

$$\frac{102 \times 126 \times 7.02}{3.14 \times 37 \times 41} = 18.94 \text{ Tw. Per In.}$$

Here we have an actual twist of 18.56 and a calculated twist of 18.94 which amounts to a difference of 0.38 of a turn or 2 per cent less than the calculated twist. This test was made on full bobbins and hence the actual twist on the empty bobbin should drop to 97 per cent of the figured twist.

In passing, I'd like to add that in figuring the twist per inch full recognition was made in regard to the thin wall tape used on our frames.

CONTRIBUTOR No. 7324

NOMENCLATURE is the naming of things. Why not a standard nomenclature for cotton mill things? As it now is, many things are called one name by the executives, and another by the operatives. For instance: the card grinder says he grinds his "slats", but when the superintendent orders new ones he always orders flats, as he should. The overseer weighs his card sliver, but when the drawing hand gets it he speaks of it as so much "roll", and the tall fellow with the wide shoulders is down on the time sheet as a roving hauler, but *he* says he hauls "ropin' "; the frame hand asks the fixer for a new "steward" or perhaps a "ropin' stick" when he needs a new skewer. And so on, all the way through the mill. Let's teach 'em the proper nomenclature.

Jumping Drawing Rolls

EDITOR COTTON:

This replies to your "CONTRIBUTOR No. 7315", who asked how to stop front rolls on drawing frames jumping, in his question on page 102 of the January 1942 issue.

Since this trouble is not with all his rolls, and since it can be stopped by changing a roll from another line, his trouble must be caused by worn collars on the top rolls.

He states that his rolls are well oiled, but does not say that they are properly cleaned and free of chokes, which would also cause this trouble.

I would suggest that he examine the collars on the top rolls and if they are worn they should be re-worked.

CONTRIBUTOR No. 7339

Weave Room Seconds

EDITOR COTTON:

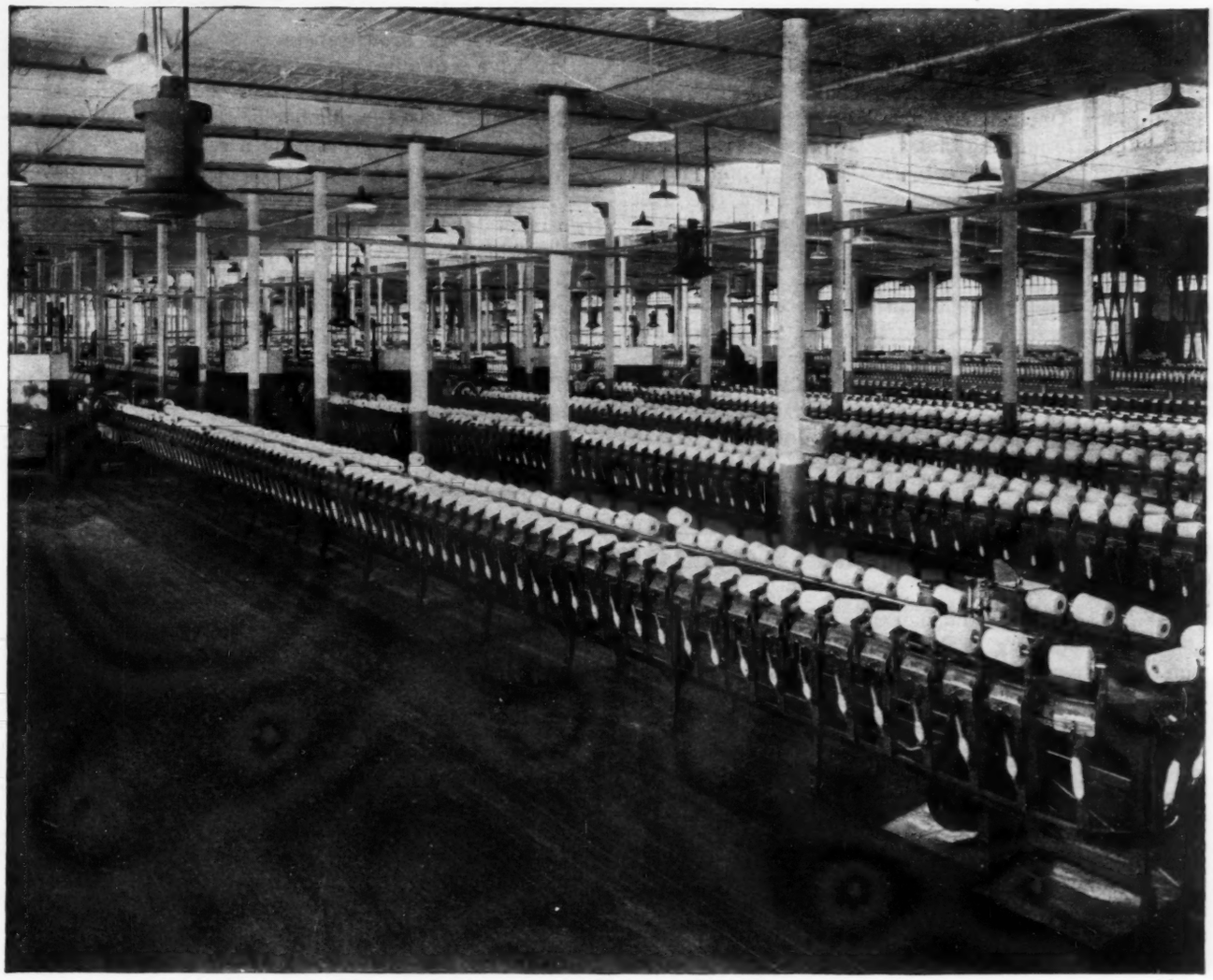
In answer to the question of "CONTRIBUTOR No. 7249" on page 95 of the August 1941 issue I am glad to give herewith the methods which we have found to be helpful in controlling our seconds in woven goods.

My experience has taught me that to keep seconds *down*, one must just keep everlastingly after those responsible for the imperfections—whether it be the spinner, carder or weaver—but always after the seconds. Most of the imperfections which cause seconds are known, and also the remedies, and every overseer should follow closely enough to *know* that the remedies are being used, and the overseer must also be followed closely to see that the right dose is applied. Again I say that the only way to keep them down is by being right with them when they are seen in the cloth room.

I have before me now our weekly seconds sheet, which shows about 8,000 pieces woven, with 2.16 per cent seconds. On this sheet there are 31 spaces for the same number of imperfections, so that each second is in a column showing why it is a second. Now, out of this 2.16 per cent seconds, half of them are black oil, thin stripes, thick stripes, mis-picks, and slasher damage or spots. The thick and thin stripes and the mis-picks are simply loomfixing jobs, and every one in the weave room knows the remedies. Black oil is always with us, and the only way is to wash it out, and if this is forbidden, then it goes into seconds—and the only remedy to keep it down is to follow the oilers and cleaners as closely as possible.

The slasher damage consists mostly of spots, some brown and some black. These spots are only on the warp, and some of the black could possibly get on the warp in the loom, but, figuring that they are all caused on the slasher, we must consider: condensation (hoods being dirty), boiling in the size box so hard that the size is splashed on the yarn after it has passed through the squeeze rolls; galvanized pipes or fittings—one such fitting in a mile of pipe would cause black spots, etc.

Some brown spots are caused by the size getting



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hard on the edges of the rolls and falling or whipping into the size; also, sometimes when the size is not boiled long enough there are globules of starch that get through. Our remedy for a lot of this is a strainer under the size pipe, so that all size passes through the strainer. This strainer catches all foreign matter and all thick size that might come through. Then, one must keep the hoods clean, use a control on the size box if possible, and make certain that brass pipe and fittings are used throughout.

At the slasher, we use a slasher cloth which is about two inches wider than the rolls. After this has run long enough for the cloth to set, we trim off the cloth even with the ends of the rolls. We have found that this stops the accumulation of size on the ends, which becomes hard and then flakes off and gets in the size, making brown spots.

We have a detailed report on all seconds which go to the weaver two or three times a day, giving the kind of defect and the number of the loom. The loom is fixed immediately, preventing a repetition.

When a loom fixer puts in a new warp, we have him mark the tag and give it to the secondhand, who then inspects the loom and sees that it is started correctly. This, we find, will do away with that "first-cut" alibi.

All looms should be inspected twice daily by the secondhand or fixer, for wrong draws, thread runs, and mis-picks.

These things, and *keeping everlastingly at it*, make up our formula.

CONTRIBUTOR No. 7335

A Point of Economy at the Warpers

HOW DO cotton mills make money?

I was talking to John Simpson, the spare floor philosopher, about it this morning and I must confess I'm in the dark about the matter. Here's the way John told it to me: "This company works about 1000 people," he said. "The pay of all these workers—from the president down to the sweeper will average about one cent a minute, or 1000 cents a minute for the whole crowd. If all this money was poured out of a great vessel at the rate of 1000 cents a minute it would make a continuous stream of money.

"But that is only one stream of money that must continuously pour from the tills of this company. There are many others: insurance, taxes, lights, water, upkeep of the buildings, power to pull the wheels, and supplies for the machinery."

"The way you can call off these different things makes me think you've been studying the matter," I said.

"I have," he said, earnestly. "And in my opinion as the pay of workers get higher and the hours get shorter, in the future, it's going to take all the Scotch in us to keep the wheels going."

"You talk like you were one of the managers of this mill," I said, jokingly.

"We're all managers," he asserted, "from the sweeper on up. We're managers of our jobs, and if we don't manage our jobs right we're money wasters," he said.

"Are you managing your job right?" I asked him.

"I don't know," he said. "But I'll tell you this much, I am making a real effort to do so."

"John," I said in a changed-subject tone, "we've talked about your job several times and I can't help but gain the impression that you are just a little too penny-pinching for the good of the job. Now don't misunderstand me. Wait till I get through and then form your opinion. Don't you think a man ought to order, or have made, enough new parts to keep his job in first class condition? And don't you think that patching a job up is a bad thing to do? I merely mention this because I want it made clear," I told him.

"I may be a penny-pincher but I try awfully hard not to be a pound-foolisher. As for keeping new parts on hand the amount of parts used or needed should govern that. A machine should never be patched up, or only temporarily while a new part is being ordered or something like that. This mill has been operating for over 20 years and on the different machines all over the place there are certain moving parts that have been on the machines all the time and have never been replaced. The reason these parts haven't been replaced is because they haven't worn. And the reason they haven't worn is that they were first put on right and have been kept that way ever since."

"You aren't trying to tell me that it is possible for all parts of a machine to last 20 years are you?" I asked.

"Oh, no!" he said. "But it is possible to make all parts of a machine last much longer if you try to find out why the different parts wear out. I can give you a little illustration right here on the warpers. For the first 2 or 3 years after the company bought these warpers it was not necessary to put on any new clutch pins. Finally it became necessary to install a set. In 3 months time the new set was worn as badly as the original set which had run about 3 years."

"What caused the pins to wear out so quick?" I asked.

"That's what I started to tell you," he said. "I asked myself that same question, and so I searched for the answer. I found that the clutch pin holes in the steel plates had worn down till the edges of the holes were as sharp as a razor. The sharp edges is what caused the second set of pins to wear out so quickly."

"What did you do about it?" I asked him.

"I took a piece of emery cloth and sanded the edges until they were round," he said.

"Did it do any good?"

"Oh, yes. The third set of pins lasted 18 months," he declared.

"Well, John," I said, "after all, I may owe you an apology. You know I said a while ago that I thought perhaps you were a little too penny-pinching. I was just thinking of the tremendous saving that would take place in this mill if all the thousands of little parts could be made to last 3 times as long. If

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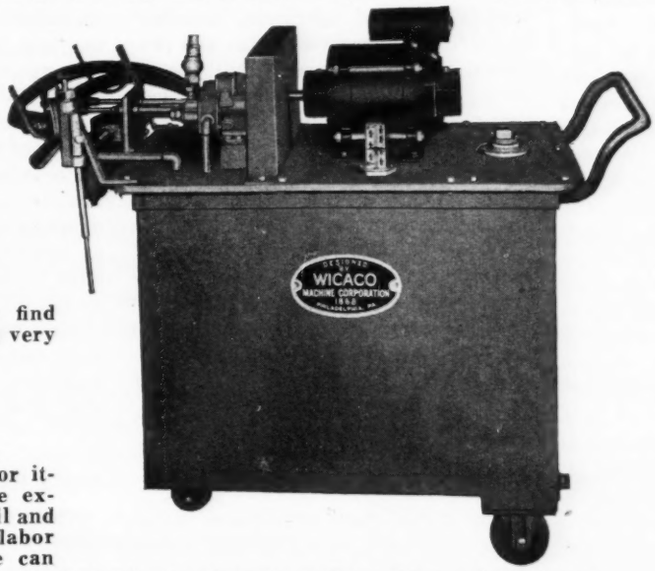
"We have not yet completed all of our tests but we are certain that oil economy can be effected and through the use of the machine the oiling operation is considerably simplified and much cleaner. We also find that spindles can be oiled very much faster."

From a Busy Cotton Mill

"The machine will pay for itself within one year; we expect to save 50% on our oil and time tests indicate 50% labor saving. We also note we can flush out the base of the bolsters which we had never done in thirty years; the spindles are running cooler, and we hope, within a week, to give you some data on possible power saving."



A Rayon Plant Reports

"We allow approximately 2½ hours time on a 200 spindle twisting frame for flushing out the bolster and bringing the oil to the proper level, whereas our former method required 5 to 6 hours for the same operation."

*Names on request.

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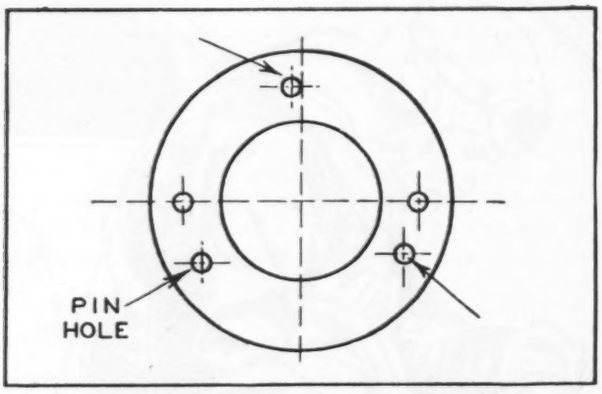


This is the sketch John drew for this correspondent of the steel clutch plate on warpers . .

this mill's supply bill could be cut down two-thirds do you think you would benefit by it?"

"I think so," he said, "for this reason: It would help production and also necessitate spending only one-third as much for supplies. Result, the company would make a good profit, and it is reasonable to believe that if the company makes a good profit it is going to pay good wages. I'm sure the mill can't pay good wages unless they make a little profit."

"I'm sure you're quite right in that," I said. "But to get back to things more your size,—how about drawing me a little sketch of that steel clutch plate you were talking about. I might want to pass the idea on to someone else."

"All right," John said, after making a few circles on a piece of paper, "Here it is. The holes the arrows point to are the clutch pin holes. The instruction book says to keep the pins polished. But you must do more than that. The edges of these holes the arrow points to must be sanded off to keep from cutting or wearing the pins. Reading the instruction book is a good thing to do, however, it doesn't tell you everything. As a matter of fact, all that we've talked about is my own experience."

"That's fine," I told him, and asked, "Have you had any other experiences you would like to tell about?"

"I just remembered an experience I had with the spooler knotters. For several months we had a great deal of looper needles to break. Hardly a day passed that we didn't have 4 or 5 of them to break. A looper needle costs 50 cents and the amount that was being spent for them would have just about paid the wages of an extra worker. To make a long story short, we found that the knotter cams were not receiving sufficient oil."

"Do you remember what I said about penny-pinching. I bet you were trying to save oil," I said.

"No," he said, "that was not it. The man that was supposed to do the oiling was just half doing his work, and when we got rid of him the trouble went with him."

"Well, John," I said, "I suppose I had better be going. I bet we've been standing here for 15 minutes, and that's setting a pretty bad example for the others."

Summer Course in Textile Analysis

A summer course in textile testing will be conducted by the Textile Division of the Massachusetts Institute of Technology, Cambridge, Mass., beginning July 28th and continuing for seven weeks. The lectures, demonstrations and laboratory exercises are planned to meet the changing requirements brought about as a result of the war. Increased use is being made of statistical methods of analysis for sampling, test planning and for the intelligent interpretation of results. Thus instruction covering the modern concepts of textile technology is doubly important for those interested in research, quality control, development of new materials and uses, and for inspectors of textile materials.

The modern textile laboratories at M.I.T. provide unusually complete facilities for physical and optical analysis of fibers, yarns and fabrics. Opportunity is provided for work in high-speed, fluorescent light, and polarized light photography, and all phases of micro-analysis. The student is also provided opportunity to carry on resilience, creep, impact, heat transmission, permeability, single filament, fiber bundle, flexibility and repeated stress experiments as well as the more conventional testing procedures. Detailed information is provided as to graphical presentation of data, report writing, control of variable factors, laboratory organization and operation, specification writing, apparatus design and precision of measurements. Full use is made of lecture demonstrations, motion pictures and lantern slides.

The work in the special course will be under the personal direction of Professor Edward R. Schwarz and a competent corps of instructors. Registration will be accepted in the order of receipt to the capacity of the laboratory facilities. Details as to registration and schedule may be secured from the Director of Admissions, or the Textile Division, Massachusetts Institute of Technology, Cambridge, Mass.

◆

Cotton Yarn Appearance Standards

The Cotton Yarn Appearance Standards, developed jointly by the American Society for Testing Materials and the Agricultural Marketing Administration of the U. S. Department of Agriculture, are now available at the A.S.T.M. headquarters, 260 South Broad Street, Philadelphia, Pa., instead of the Department of Agriculture.

These appearance standards are for use in a revision of the A.S.T.M. Standard General Methods of Testing and Tolerances for Cotton Yarns, the revision which covers photographic standards having been published for the past three years. As required in this standard, the set of reproductions consists of 20 5½x10-inch photographs, representing four grades each of five groups of yarn numbers. The standards for each group are mounted on a board 27½x15 inches. The grouping of yarn numbers covered by the five boards is as follows: 3.0s to 7.0s; 7.0s to 16.5s; 16.5s to 32.0s; 32.0s to 65.0s; and 65.0s to 125.0s.

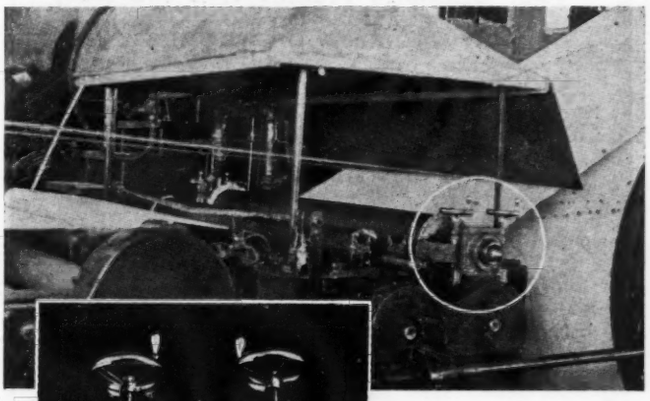
The cotton yarn appearance standards may be secured at $10.00 per set. Standards for single groups are available at $2.50 per board.

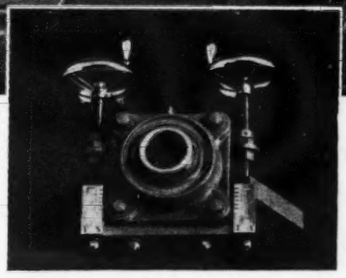
◆

Delta Kappa Phi Banquet

The Philadelphia Textile School Alumni and active chapters of the Delta Kappa Phi Fraternity recently held a joint banquet and meeting at the Engineers' Club, Philadelphia. Toastmaster for the evening was Joseph Goodavage. Members of the fraternity prominent in the textile field gave short talks.

Reduce SLASHER COSTS





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- 2. Higher slasher production
- 3. Elimination of yarn sticking to cylinders
- 4. Lower size cost
- 5. Lower steam cost
- 6. Improved weaving

Now it's possible to apply just the correct amount of squeeze roll pressure for the particular material being processed. Adjustment of pressure can also take care of variables across the width of the warp due to unequal drying, etc.

Removal of excess size through this increased roller pressure naturally permits increased operating speeds, reduces stickiness, and decreases fly in weave room.

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Here is the "cream of the crop" of literature on textile subjects as prepared by COTTON advertisers for aid in mill operation and management. These reference books and catalogs are free for the asking and there is no obligation involved. Read through the list carefully for booklet on the subject or equipment in which you are interested. Then fill in the numbers of those desired on the coupon on the following page and mail it to COTTON.

GENERAL ECONOMIC, MANAGEMENT . . .

3. MILL NOTES—Special bulletin issued for Southern Mills.—UNITED STATES TESTING CO., Hoboken, N. J.

4. HOW FACTORING CAN INCREASE PROFITS—Describes how factoring works out in keeping clients' capital liquid and attitude of factor toward checking credits, including typical balance sheet.—COMMERCIAL FACTORS CORP., New York City.

PLANT AND PLANT MAINTENANCE . . .

101. STEWART FENCES — Illustrated catalog which is a complete text on the subject of fence for industrial uses.—STEWART IRON WORKS COMPANY, INC., Covington, Ky.

102. "TANK TALK"—Sixteen page booklet of illustrations showing various types of elevated steel tanks, constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

104. FENCE FACTS—A new booklet illustrating and describing chain link fence in a variety of styles and four different metals for every type of fencing installation. Also wrought iron fence in various beautiful styles. A concise handling of information for those wanting facts about fence.—PAGE FENCE ASSOCIATION, Bridgeport, Conn.

105. DULUX — THE WHITE FINISH THAT STAYS WHITE—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays white, stays cleaner and stands repeated washing.—E. I. DU PONT DE NEMOURS & CO., Finishes Division, Wilmington, Del.

106. THEY STAY BRIGHTER LONGER—This interesting illustrated booklet containing facts about Mazda lamps will be sent you free on request.—GENERAL ELECTRIC COMPANY, Dept. 166, Nela Park, Cleveland, Ohio.

107. FINNELL SCRUBBERS — Illustrated leaflets describing and giving specifications for the new Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. RIHCO TYPE B HUMIDIFIER HEADS—Bulletin describes new atomizers with construction lessening air consumption. — ALDRICH MACHINE WORKS, Greenwood, S. C.

111. SUPPLY, MAINTENANCE AND REGULATION OF HUMIDITY—General catalog of humidifying and air-conditioning devices including humidifiers, controls, atomizers, sprayers, etc.; also, lap weight indicators for picker room.—AMERICAN MOISTENING CO., Providence, R. I.

112. ROBBINS FLOORING—Outstanding installations of flooring including hard maple for industrials with textile and general photographs. — ROBBINS FLOORING CO., Rhinelander, Wis.

114. HARD MAPLE FLOORING—Featuring close-up of Northern Hard Maple Flooring and specimen pieces to show grades, prepared for architects, builders and others when considering flooring grade requirements.—MAPLE FLOORING MFRS. ASSN., Chicago, Ill.

115. ATOMIZER HUMIDIFIERS—Recent issue of "Parks' Parables" on atomizer method of humidification. Bulletin 1140 — PARKS-CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

118. BLUE RIDGE AKLO—12-page booklet—Industrial glass for windows and skylights. Reducing glare, keeping interiors cooler. Illustrated.—Blue Ridge Div., LIBBEY-OWENS-FORD GLASS CO., Toledo, Ohio.

119. HANDBOOK OF MAGNESIUM ALLOYS—45 page booklet on constitution, properties, magnesium and alloys including working and machining. Data sheets also available to fabricators.—AMERICAN MAGNESIUM CORP., Cleveland, Ohio.

120. SCALES FOR THE TEXTILE INDUSTRY—12-page book illustrating modern, automatic-indicating scales for all requirements of the textile industry.—TOLEDO SCALE COMPANY, Toledo, Ohio.

123. THE RIGHT PAINT FOR YOUR PLANT—Illustrated booklet on paints for mill interiors, exteriors, mill villages.—U. S. GUTTA PERCHA PAINT CO., Providence, R. I.

POWER TRANSMISSION, MOTORS, BELTING, LUBRICATION . . .

202. TEXTILE MOTORS—Bulletin on ball-bearing motors for loom drives and all textile applications.—FAIRBANKS-MORSE CO., Chicago, Ill.

207. DAYTON COG BELT CATALOG—A 32 page booklet on power drives, arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired.—THE DAYTON RUBBER MFG. CO., Dept. C-11, Dayton, Ohio.

210. GOODYEAR MECHANICAL RUBBER GOODS CATALOG—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill.—GOODYEAR TIRE & RUBBER CO., Akron, Ohio.

213. LUBRICATION—This attractive booklet contains valuable and interesting articles on loom lubrication and also on spinning design and the function of spindle oils.—THE TEXAS COMPANY, New York, N. Y.

214. NORMA-HOFFMANN BEARINGS CATALOG—NORMA-HOFFMANN BEARINGS CORP., Stamford, Conn.

216. LEATHER BOOKLET NO. 202 — Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, Solid Round Leather Belting, Flat Belting.—CHAS. BOND CO., Philadelphia, Pa.

217. TEXTILE LEATHERS—Catalog of complete line of leather products for looms, condensers, gill boxes, combs. Including G & K "Hairitan."—GRATON & KNIGHT, Worcester, Mass.

222. NEEDLE AND BALL BEARINGS—Catalog 404 gives ball bearing data with data on selection of proper bearings; Catalog 22 outlines use of needle bearings, including textile uses, types, installation, lubrication and general data. Both issued by TORRINGTON CO., Torrington, Conn.

224. LEATHER BELT DRIVES — Clear, concise non-technical descriptions of short-center pivoted motor leather belt drives with easily used drive selection tables, other pertinent data. — SOUTHERN BELTING CO., Atlanta, Ga.

225. BRONZE BEARINGS—64 page catalog of standard sizes of textile and industrial bearings, graphited oil-less bearings, bronze bars, babbitt metals.—THE BUNTING BRASS AND BRONZE CO., Toledo, O.

227. MULTIPLE GROOVE V-BELT DRIVE DATA BOOK—Complete book showing many drive combinations for easy selection with engineering information for figuring special V-Belt drives. No. 915.—ROCKWOOD MFG. CO., Indianapolis, Ind.

228. MOTOR SWITCHES AND STARTERS—Bulletins, covering Combination magnetic switch, mercury-button limit switch, magnetic motor starter, limit switch with snap-action.—GENERAL ELECTRIC CO., Schenectady, N. Y.

230. PRINCIPLES OF TEXTILE MILL LUBRICATION—Booklet giving specific lubricating problems and data on practical textile operation, including advice on uses of various oils and greases.—TIDE WATER ASSOCIATED OIL CO., New York, New York.

231. V-BELT ENGINEERING DATA BOOK—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. — MANHATTAN RUBBER MANUFACTURING DIV. of Raybestos-Manhattan, Inc., Passaic, N. J.

232. SKF INDUSTRIES SPHERICAL ROLLER BEARINGS—36 page catalog on bearing applications and selection, also time saving computations.—SKF INDUSTRIES, INC., Philadelphia, Pa.

235. JOHNSON LEDALOYL BEARING BRONZE—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings.—JOHNSON BRONZE COMPANY, New Castle, Pennsylvania.

236. LEATHER BELTING CALCULATOR—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request.—J. E. RHOADS & SONS, Philadelphia, Pa.

237. FAFNIR BALL BEARINGS FOR THE TEXTILE INDUSTRY—Outlining the applications and advantages of ball bearings on textile machinery.—FAFNIR BEARING CO., New Britain, Conn.

239. SKF BETTER SPINNING AND TWISTING—16-page catalog containing technical information relating to construction and performance of SKF roller bearing spindles, tension pulleys, guide and idler pulleys and miscellaneous pulley and bearing applications.—SKF INDUSTRIES, INC., Philadelphia, Pa.

240. REEVES VARIABLE SPEED CONTROL—Catalog G-397, 120 pages, containing numerous illustrations and examples of variable speed control equipment applications in textile industry.—REEVES PULLEY COMPANY, Columbus, Ind.

243. ELECTRICAL MACHINERY CATECHISM—40-page book on electrical machinery—also bulletins on electric motors and pumping equipment.—FAIRBANKS, MORSE & CO., Chicago, Ill.

244. TEXACO SPINDURA OILS—Folder on lubrication for all types of spindles, based on actual tests.—TEXAS CO., New York City.

245. COLTALOG OF ELECTRICAL PRODUCTS—58 page booklet on switches, controls, fittings, etc.—COLT'S PATENT FIRE ARMS MFG. CO., Hartford, Connecticut.

246. CUTTING OPERATING COSTS—Nationwide Illustrated Survey showing how American textile mills cut operating costs with Multiple V-Belt Drives.—GATES RUBBER CO., Denver, Colorado.

247. GILMER V-BELT DRIVES—100 page guide with complete engineering material for selection installation sheaves and all V-belt drives.—L. H. GILMER CO., Tacony, Philadelphia, Pa.

248. BEARING AND TRANSMISSION SERVICE—48 page booklet on hangers, pillow blocks, bearings, etc.—CHAPMAN TRANSMISSION CORP., Buffalo, New York.

INSTRUMENTS, STEAM SPECIALTIES . . .

301. JOHNSON ROTARY PRESSURE JOINTS—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. — THE JOHNSON CORP., Three Rivers, Mich.

302. LUNKENHEIMER CATALOG 78—136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights.—THE LUNKENHEIMER CO., Cincinnati, Ohio.

304. MORTON NICKEL IRON QUICK OPENING HANDLE GATE VALVE—Illustrated leaflet describing the new Morton Valve for dyeing machines, pipe lines, steam and water lines, boiler blower valves and throttle valves. Manufactured in nickel, stainless steel and stainless steel trim.—MORTON MACHINE WORKS, Columbus, Georgia.

306. TEMPERATURE CONTROLLERS — 48-page illustrated Bulletin 225, describing instruments and accessories essential for efficient dyeing, finishing, slashing, mercerizing, kier boiling, and other processes involving temperature.—THE FOXBORO COMPANY, Foxboro, Mass.

307. THERMOMETERS AND PRESSURE GAUGES—Catalogs 6705-R and 6706 give data on both circular and rectangular case pressure type thermometers for indicating, recording and controlling processing operations in textile industry.—BROWN INSTRUMENT COMPANY, Philadelphia, Pennsylvania.

CARDING, SPINNING, WINDING, ETC. . . .

401. LUMMUS DUSTLESS, STEEL BLENDING FEEDERS—Bulletin describing automatically closing, positively locking door on feeders to prevent overloading, choking.—ALDRICH MACHINE WORKS, Greenwood, S. C.

402. AUTOMATIC OVERHEAD CLEANER FOR SPINNING, WINDING, WARPING AND TWISTING—24 page booklet showing the new American Mono-Rail automatic cleaner in operation on MonoRail track circuit over Spinning, Warping, Winding, Twisting, etc. This cleaner prevents accumulation of fly with no harm to roving.—THE AMERICAN MONORAIL COMPANY, Cleveland, Ohio.

403. SACO-LOWELL COTTON MACHINERY—TWISTING—A 36 page illustrated brochure explaining the company's twisters and parts, including the four basic type twisters, features of new construction and general notes on twisting. Production calculations and specifications are included. — SACO-LOWELL SHOPS, Boston, Mass.

404. SACO-LOWELL COTTON MACHINERY—SPINNING—The second edition of a 56-page booklet, illustrated with the company's product and containing valuable charts, production tables and other spinning data. — SACO-LOWELL SHOPS, Boston, Massachusetts.

405. YARN CONDITIONING AND TWIST-SETTING—Tenesol booklet on new conditioning agent for textile yarns.—BURKART-SCHIER CHEMICAL COMPANY, Chattanooga, Tenn.

406. CORK—THE MODERN ROLL COVERING—Attractive booklet outlining the uses and advantages of cork for textile roll covering. — ARMSTRONG CORK PRODUCTS CO., Industrial Division, Textile Products Section, Lancaster, Pa.

407. CARD GRINDER INFORMATION—Folder on care of card grinders, part replacements, etc.—B. S. ROY & SON CO., Worcester, Mass., and Greenville, South Carolina.

408. THE BOWEN SPINNER'S RECORD BOOK—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data.—U. S. RING TRAVELER COMPANY, Providence, R. I.

410. FIBRE CONDITIONING WITH TEXSPRAY COMPOUND—30 page booklet on treating of cotton or cut staple fibers with Texspray Compound including the advantages and development of fiber conditioning.—THE TEXAS CO., New York City.

411. THE VICTOR CIRCLE-D TRAVELER—Pamphlet describing this important advance in traveler design.—VICTOR RING TRAVELER COMPANY, Providence, R. I.

413. SONOCO PRODUCTS—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc.—SONOCO PRODUCTS CO., Hartsville, S. C.

416. BRIEF SAGA OF THE RING TRAVELER—Interesting history of development of ring spinning in connection with cotton manufacturing. — NATIONAL RING TRAVELER CO., Providence, R. I.

417. PRECISION WINDING FOR SILK AND RAYON YARNS—Describes the new No. 50 Leesona Winder and all attachments that are used for silk hosiery threads and rayon yarns. — UNIVERSAL WINDING CO., Providence, R. I.

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Continued From Page 121

418. FIDELITY SPOOLING MACHINES — Illustrated booklet describing the Fidelity Spooling Machine and outlining its many applications in the textile industry. — FIDELITY MACHINE COMPANY, Philadelphia, Pa.

419. TEXTILE APRONS—Illustrated folder showing the steps in manufacture of genuine leather aprons for all types of long draft spinning and card room machinery.—TEXTILE APRON COMPANY, East Point, Georgia.

421. AUTOMATIC WINDERS—Folder describing latest winding equipment with full automatic operation. Only one automatic head for up to 100 spindles.—ABBOTT MACHINE CO., Wilton, N. H.

WEAVING, SLASHING . . .

501. EIGHT QUESTIONS — Booklet of printed forms to assist mill in comparing efficiency and economic worth of new looms against older ones.—CROMPTON & KNOWLES LOOM WORKS, Worcester, Mass.

502. TEXTILE COUNTERS—Catalog T37 describing pick counters for looms, hank counters for spinning, yardage counters for cloth loom, etc.—VEEDER-ROOT, INC., Hartford, Conn.

503. HARNESS, HEDDLES AND REEDS—8 page illustrated booklet on steel heddles, harness frames, mail-eye harness, jacquard heddles, etc.—EMMONS LOOM HARNESS CO., Lawrence, Mass.

504. TEXTILE LEATHERS—Catalog of complete line of leather products for looms, condensers, gill boxes, combs. Including G & K "Hairitan."—GRATON & KNIGHT, Worcester, Mass.

505. NOTES ON EXSIZE—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes.—PABST SALES COMPANY, Chicago, Ill.

507. WARP SIZER FOR SPUN RAYON—12 page booklet illustrating latest methods in sizing rayon staple.—CHARLES B. JOHNSON MACH. WORKS, Paterson, N. J.

508. SIZING AND FINISHING — A pamphlet which will give the mill man an understanding of starch properties which will lead to greater efficiency in sizing and finishing.—STEIN, HALL & CO., INC., New York City.

509. ARCY—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. —DRAKE CORPORATION, Norfolk, Va.

510. THE ROMANCE OF PRAIRIE GOLD—Attractive illustrated book which tells the story of corn and the uses of corn products in industry.—CORN PRODUCTS SALES CO., New York, N. Y.

511. HOUGHTO SIZE SR — Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost.—E. F. HOUGHTON & CO., Philadelphia, Pa.

512. CARO-GANT — The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant, the Warp Dressing that makes stronger, more elastic warps with a maximum breaking strength and a minimum reduction in elasticity.—HART PRODUCTS CORP., New York City.

513. REDUCE SLASHER COSTS—Folder on Pressure Regulator for pressure control squeeze rolls to improve size penetration, weaving slasher production. —NORCROSS LABORATORIES, Waban, Mass.

514. WEAVING DISEASES — THEIR CAUSES AND PREVENTIVES—Illustrated booklet on weaving of rayon fabrics.—INDUSTRIAL RAYON CORP., New York, N. Y.

DYEING, FINISHING, CLOTH ROOM . . .

601. SANFORIZING MACHINERY — Illustrated booklet describing the Sanforizing machinery offered by the TEXTILE FINISHING MACHINERY CO., Providence, R. I. This bulletin is available only to finishing plants or executives thereof.

602. ALUMINUM IN THE CHEMICAL INDUSTRY—Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses.—ALUMINUM COMPANY OF AMERICA, Pittsburgh, Pa.

603. THE MORTON SYSTEM—Illustrated literature describing the Morton Improved double circulating raw stock dyeing and bleaching machine, the Morton horizontal revolving beam and package dyeing machine and beam bleaching machine, the Morton vertical package and roving dyeing machine.—MORTON MACHINE WORKS, Columbus, Ga.

604. THE NEW PROCTOR AUTOMATIC YARN DRYER—6 page illustrated folder describing the new Proctor automatic yarn dryer which has the exclusive new Proctor traveling skein protector.—PROCTOR & SCHWARTZ, INC., Philadelphia, Pa.

605. BUTTERWORTH ELECTRIC GUIDERS — 6-page folder describing and illustrating the new Butterworth Electric Cloth Guider. This guider is built on the same principle as the Foxwell Air Guider.—H. W. BUTTERWORTH & SONS CO., Philadelphia, Pennsylvania.

606. SLITTERS AND ROLL-WINDERS — 8 page folder illustrating more than 25 types of slitters and roll-winders for textiles. Form CF-640.—CAMERON MACHINE CO., Brooklyn, N. Y.

607. GENERAL ELECTRIC EQUIPMENT FOR TENTERS—Folders including drive and control, guider equipment, welt-straightening controls—providing means of finishing cloth of uniform quality.—GENERAL ELECTRIC CO., Schenectady, N. Y.

608. "3 OR 5"—Series of Textile Dyeing Folders on cutting operating costs with stainless steel equipment.—S. BLICKMAN, INC., Weehawken, N. J.

DYESTUFFS, CHEMICALS, SOAPS . . .

704. THE TEXTILE APPLICATION OF METASOL (CALGON)—Handbook with detail information covering the use of Metasol in Scouring, Bleaching, Dyeing and Finishing.—BURKART-SCHIER CHEMICAL CO., Chattanooga, Tenn.

707. THICKENING MATERIALS FOR TEXTILE PRINTING—Describing materials and methods employed in preparation of color thickening so that it may be properly and economically transferred to cloth through the medium of the printing machine.—STEIN, HALL & CO., INC., New York City.

709. CAUSTIC SODA BULLETIN — A data and reference book designed for the user of caustic soda. Complete with charts, drafts and formulas.—PENNSYLVANIA SALT MFG. CO., Philadelphia, Pa., who also manufactures Hydrogen Peroxide.

711. KEY PRODUCTS FOR TEXTILE INDUSTRY—22 page leaflet describing textile specialties used in dyeing, bleaching and finishing as applied to Southern textile industry from Southern plants of AMERICAN CYANAMID & CHEMICAL CORP., Charlotte, N. C.

712. STANDARD SILICATE ALKALIES—Booklet on silicate of soda for kier boiling, bleaching, water treatment, etc., giving tables for specific gravity, temperature correction, tank capacity.—STANDARD SILICATE DIV., Diamond Alkali Co., Pittsburgh, Pennsylvania.

714. FUGITIVE TINTS — Information on water soluble, oil soluble, all types fugitive tints.—TINT SERVICE DIV., United States Testing Co., Hoboken, New Jersey.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletins on Aquarol, water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and rayon, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

717. FINISH KB — Finishing compound designed as binder in combination with filling and stiffening compounds. Avoids dusting, insures draping qualities.—SANDOZ CHEMICAL WORKS, New York City.

719. MERCERIZING AND DYPENOL — 10 page booklet on methods of mercerizing, caustic recovery, important facts in mercerizing, etc.—HART PRODUCTS CORP., New York City.

720. AVITEX—Bulletin 2B—Describes the varied uses of textile finishing agents. Includes extensive experience in the field. Designed for practical working conditions covering cotton, wool, rayon, silk and linen mill applications.—Fine Chemicals Division, E. I. DU PONT DE NEMOURS & COMPANY, INC., Wilmington, Del.

722. LUPOSEC — Leaflet describing Luposec, a waterproofing agent with great stability; soluble in cold or warm water at all temperatures; suitable for all fibers and especially effective in splash-proofing silk hosiery.—JACQUES WOLF & CO., Passaic, N. J.

723. RHOPLEX RESINS—Attractive folder discussing the outstanding properties of these Aqueous Dispersions with suggestions for their application to textiles.—ROHM & HAAS CO., Inc., Philadelphia, Pennsylvania.

725. THE APPLICATION OF SOAPS AND SOAP PRODUCTS TO TEXTILE PROCESSING—40-page illustrated booklet covering the principal operations in textile processing. Special notes and suggestions are given for those operations requiring soaps or soap products. — COLGATE-PALMOLIVE-PEET COMPANY, 105 Hudson St., Jersey City, N. J.

726. WETSIT—Leaflet describing Wetsit, a synthetic aromatic compound with excellent surface tension reducing properties; gives rapid wetting out and thorough penetration; available in three strengths.—JACQUES WOLF & CO., Passaic, N. J.

727. THE ONYXSANS—24 page book describing the application of cation active permanent softeners in textile processing and finishing plants.—ONYX OIL & CHEMICAL CO., 15 Exchange Place, Jersey City, N. J.

732. A NEW FINISHING OIL—Folder on Warco 945-A finishing agent where softness is desired.—WARWICK CHEMICAL CO., West Warwick, R. I.

733. DYED COTTON TEXTILE ITEMS FOR WAR USE—No. 632. Government procurement agencies, specifications with equipment and procedure for dyeing and finishing cotton textiles for war use.—CALCO CHEMICAL DIV., AMERICAN CYANAMID CO., Bound Brook, N. J.

734. DETERGENTS AND WETTING AGENTS—New folder on evaluation testing wetting agents, detergents.—E. F. HOUGHTON & CO., Philadelphia, Pennsylvania.

KNITTING . . .

801. THE WILDMAN SINGLE-HEAD FULL-FASHIONED HOSIERY MACHINE—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

803. THE TUBE-TEX FOR TUBULAR KNIT GOODS—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste.—H. W. BUTTERWORTH & SONS CO., York and Cedar Sts., Philadelphia, Pa.

804. FULL-FASHIONED HOSIERY MANUFACTURE—Illustrated folder giving the history of full-fashioned knitting and describing in detail the different processes in present day manufacturing and the application of Gulf lubricants to the various machinery, GULF OIL CORPORATION, Pittsburgh, Pennsylvania.

806. DEPENDABLE FINISHING FOR MODERN ELASTIC TOP HOSIERY—Describing and illustrating equipment for basting and attaching insert elastic, attaching wide or welt elastic and seaming elastic in women's hosiery.—UNION SPECIAL MACHINE COMPANY, Chicago, Ill.

807. CIRCULAR KNITTING MACHINES—A fifty two page illustrated booklet containing valuable information on the manufacture of transfer top hosiery. Includes illustrations of rib knitting principles, yarn changers, selvage welt, loose course and methods of laying in Lastex.—FIDELITY MACHINE COMPANY, Philadelphia, Pa.

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SEWING MACHINES . . .

902. SEWING MACHINES — Illustrated technical booklets on high speed lock-stitch sewing machines for all types of work.—SINGER SEWING MACHINE CO., New York City.

904. FORM 769. CONDENSED CATALOG — A 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade.—WILLCOX & GIBBS SEWING MACHINE CO., 214 West 39th St., New York City.

MATERIALS HANDLING . . .

1001. HOW TO DETERMINE WHERE OVERHEAD MATERIALS HANDLING EQUIPMENT CAN BE USED PROFITABLY—Illustrated folder including elements of materials handling system, preparation of simple layout.—CLEVELAND TRAMRAIL DIVISION, Wickliffe, O.

1002. CATALOG NO. 22—An attractive illustrated catalog describing in detail the Shamrock shipping containers and the new canvas trucks for textile use. —MEESE, INC., Madison, Ind.

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial application. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach, Calif.

1006. LANE CANVAS BASKETS—16 page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. HOW HANDLING PROBLEMS HAVE BEEN SOLVED—A 50-page booklet presenting in pictorial form many solutions to industrial handling problems and showing how they reduce costs, save labor, eliminate storage and provide free movement of stock between processes.—AMERICAN MONORAIL COMPANY, Cleveland, Ohio.

1009. TRUCK CASTERS AND WHEELS—24 page illustrated catalog covering casters and wheels for all truck use with specifications. — THE FAIRBANKS COMPANY, New York City.

1012. DANDUX CANVAS BASKETS—Catalog illustrating and describing "DANDUX" line of Baskets, Hampers and Trucks for the Textile Industry and general use.—C. R. DANIELS, INC., Newark, New Jersey.

MISCELLANEOUS . . .

1101. UNBRAKO SELF-LOCKING HOLLOW SET SCREW—Bulletin Form 532 includes illustration and descriptive matter of this latest improvement in socket and screws. This bulletin also features the complete line of "Unbrako" Socket Screws.—STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1102. REPAIR PARTS FOR TEXTILE MACHINERY—36 page booklet and catalog on replacement parts for opening, picking, carding, spinning and twisting machinery. — HENDERSON FOUNDRY & MACHINE CO., Hampton, Ga.

COTTON, Grant Bldg., Atlanta, Ga.

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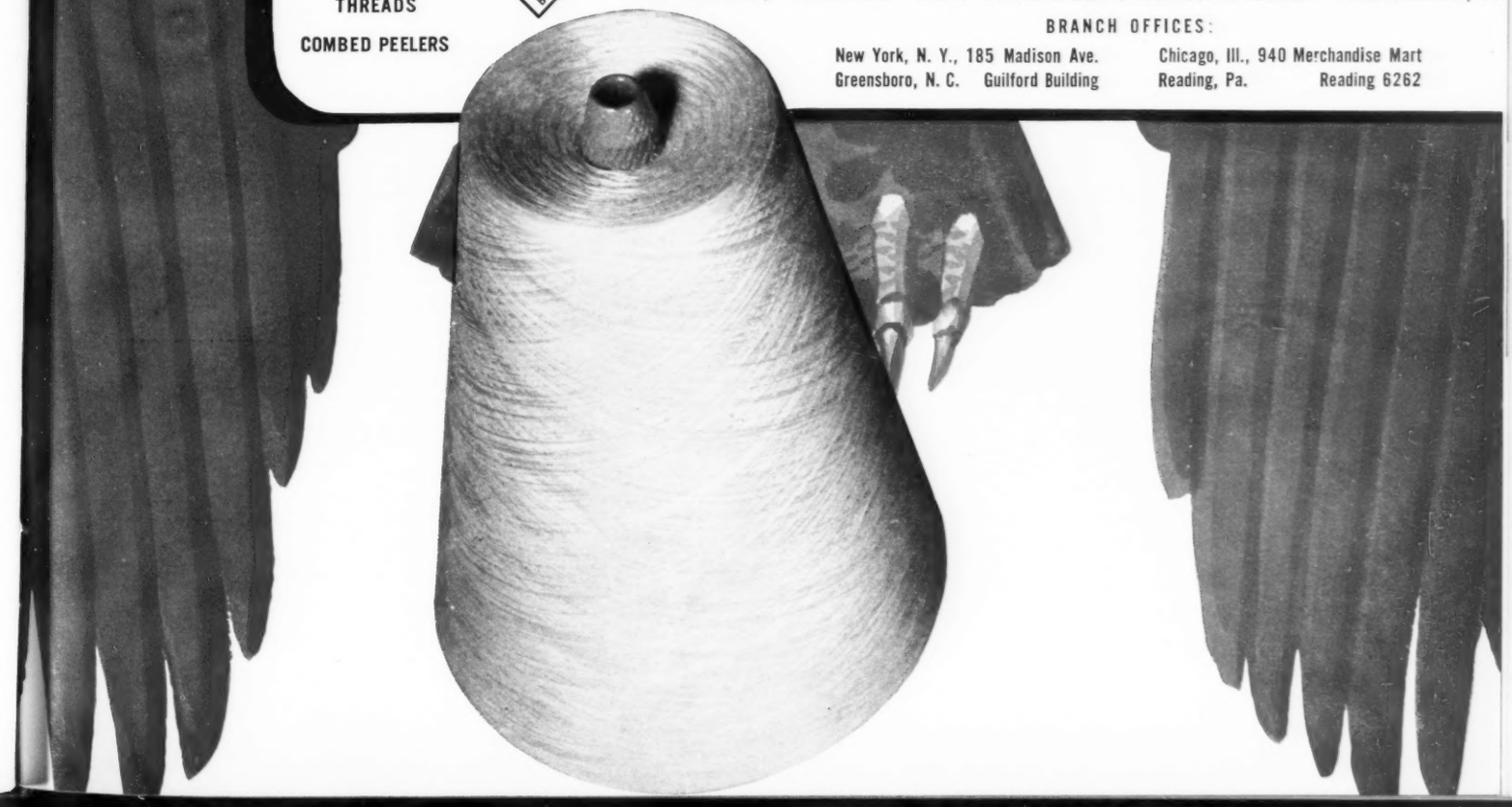

THE LONG VIEW ON SHORT CUT REPAIRS

Take Costly Guesswork Out of Knitting Machine Maintenance

With things humming the way they are these days, production certainly has to keep moving to keep pace with the trend. When a knitting machine part wears out or breaks down unexpectedly today, it becomes a moment for *quick* decision . . . and a *right* one. Patch-up or reliable repair? A local machine shop substitute or a genuine S & W factory-made duplicate?

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KNITTING SECTION

Wartime Problems Discussed at Hosiery Ass'n. Convention

IN ITS FIRST annual meeting outside of Philadelphia in its 38 years of existence, the National Association of Hosiery Manufacturers, in New York City on May 6, at the Waldorf-Astoria, held a one-day session that drew the largest attendance of mill executives on record, and provided an occasion of profit and interest for everyone present.

Since its formation, the association has conducted its annual conventions each April concurrent with the annual Knitting Arts Exhibition, in Philadelphia. When the exhibition scheduled for this year was cancelled, due to wartime exigencies, the directors changed the meeting place to New York. For the past several years, the annual Hosiery Industry Conference, conducted by this and other associations in New York each January, has, due to time of its occurrence and the character of its program, excelled the formal annual conventions, where the attendance was affected by the competing attractions of the knitting show and attendance at it on other days of the week than the convention day by a large number of mill men.

The meeting last month, however, drawing 384 executives representing companies affiliated with the association, developed into a significance and importance equalling that of the January conference. The attendance, and interest manifested, demonstrated the recognition by the industry of the importance of frequent consultations together, for this record attendance came only four months after another record-breaking crowd at the industry conference last January.

Discussion of Price Ceilings

The highlight of the convention was an address by Burton E. Oppenheim, price executive of OPA, who discussed the new General Maximum Price Regulation that had just been announced on April 28, to be effective May 11 and May 18. Following his formal remarks, Mr. Oppenheim submitted to an intensive session of questioning from a large number of the hosiery manufacturers as to interpretations on specific points. Unable to rule at the time on any particular item, Mr. Oppenheim understandingly had to deal with the questions in general terms. Most conspicuous, at the time, was a desire for information as to the application of the over-all ceiling regulation on prices of seasonal goods, such an important item in the hosiery trade. Subsequently OPA has set up interpretations for this and other matters.

The significance of the session with Mr. Oppenheim was his willingness to discuss frankly, any point of the order and its possibilities, so far as possible with the mill men, and the fact that this "all-out" round-table discussion unquestionably sent him back to Washington with a fuller understanding of the mill executives' attitude in endeavoring to meet the requirements of the order.

Formally, a resolution, unanimously passed by the association, approved the principle of price regulation as a means of controlling inflation and avoiding the extremes of economic readjustment which would otherwise follow at the conclusion of the war; and recognized the necessity of such a regulation. "We assume," the resolution stated. "that the administrator recognizes that any over-all price regulation which undertakes to cover practically all commodities is bound to reveal many situations which could not have been anticipated"; it commended the intention of the administrator to devise a formula for the pricing of seasonal merchandise. It commended the administrator's intention to grant subsidies to manufacturers when the cost of producing goods under most economical conditions would still make impossible the application of the ceiling prices provided for under the regulation

This photograph shows most of the mill men attending the convention of the National Association of Hosiery Manufacturers in New York City last month

without reducing the profit margins of the manufacturer, wholesaler and retailer to an unreasonable degree, but expressed the opinion that "control of all cost factors, including wages, is preferable to subsidy." The resolution asked the administrator to bear in mind the fact that "varying substantial time lags necessarily exist between the date of purchase of materials and the time when they can be processed and the product sold and delivered; that wages are a major item of costs over which no control exists as yet, and that our manufacturers and others are operating increasingly under severely reduced schedules due to scarcity of materials."

Hessberg's Address

Irving K. Hessberg, chairman of the board of directors of the association, delivered a brief statement at the opening of the meeting. He told of some of the accomplishments of the organization, and urged continued support of it. Speaking of the loss to the hosiery industry of nylon, "in my estimation the finest yarn ever developed for women's hosiery," he said, "I am proud to say that the hosiery industry raised not even the slightest protest against its conversion from civilian to military use, but was even happy in its sacrifice of being able to hand over such a critical material as a contribution to the winning of the war.

"It can be stated authoritatively that the production of nylon yarn has been devoted to government uses for several months past and it appears that military needs will absorb the entire output for the duration. I think it best to face the fact that this fiber will remain unavailable for an indeterminate time. The great job that the hosiery manufacturers are doing in the development of rayon for hosiery is thrilling and most commendable and I am sure that the manufacturers of rayon yarn must be very pleased to note the progress that is being made."

Earl Constantine, president of the association, devoted his address primarily to an excellent review of developments in the industry during the preceding 12 months. His address contained such a clear and complete record, chronologically, that the following extensive abstracts are reproduced as a matter of record:

Review by Constantine

"The hosiery trade practice rules were put into effect by the Federal Trade Commission on July 15, 1941. *** The rules provide for the identification of the fiber contents of our product and contain a variety of provisions whose purpose it is to legally assure decent competition and proper practice in the merchandising of our products. The rules govern all distributors as well as manufacturers of hosiery. They contain several technical standards of value to the consumer as well as to the manufacturer and distributor of the product.

"*Seamless minimum wage.* A year ago the minimum wage rate governing the seamless branches of our industry was 32½ cents per hour. On May 1, 1941, public hearing was held by the wage-and-hour division of the Labor Department on a proposal to increase the minimum wage rate. * * * The recommendations (of the committee) were for a 36-cent minimum which later was approved by the administrator and put into effect as of September 15, 1941. Although such new rate has been in effect less than eight months, and we have had every right to believe that the issue would not be reopened again before the spring of 1943, we are advised that representatives of labor have already petitioned for a reconsideration and are urging the highest minimum possible under the law, namely, 40 cents per hour.

"*Raw silk situation.* On July 26, 1941, the Office of Production Management issued an order freezing and restricting further processing of raw silk stocks. * * * On August 2, one order suspended all further processing of raw silk; another allocated slightly more than 7 per cent of the total viscose and cuprammonium rayon stocks and production to the hosiery industry to be used instead of silk; and the third set ceiling prices on raw silk stocks.

"All of these silk developments were of particular concern to all manufacturers of seamless and full-fashioned women's silk hosiery and to a lesser degree were of interest to some manufacturers of men's and infant's hosiery, who had silk numbers in their lines. As the hosiery industry was consuming at the time about 93 per cent of the total raw silk imports, it will be evident that the embargo was primarily a hosiery industry problem and one of major proportions. * * *

"The original allocation of 7 per cent of viscose and cuprammonium rayon production to the hosiery industry has been increased between August 2, 1941, and March 6, 1942, first to 9 per cent, then 12 per cent, and now 15 per cent. The value of a percentage figure is in the quantity which it represents. What we require is pounds of rayon yarn. At the time that the 15 per cent allocation went into effect it was estimated by us that it would represent approximately 45,000,000 pounds. To the extent that war requirements utilize substantial quantities of rayon yarns, to that extent the poundage of our 15 per cent will shrink. If this process should take substantial size it would create again a major problem which will require our attention and our best efforts. The step-up of the allocation from 12 per cent to 15 per cent is explained by the fact that nylon yarns were substantially withdrawn from civilian use during the month of February, 1942. Here again the hosiery industry was the principal user of the yarn. ***

"The silk and nylon yarns were principally used by the manufacturers of women's full-fashioned hosiery. To fully understand the problem faced by such manufacturers through the withdrawal of both of these yarns it must be borne in mind that their 1941 production consisted of 73 per cent of silk constructions and 22 per cent of nylon constructions—the two accounting for 95 per cent of the total full-fashioned production. At present this branch of the industry, using rayon principally, is operating, we estimate, at about 60 per cent of normal. ***

"*Seamless problems.* The seamless branches of our industry generally have been able to operate so far with only limited difficulties resulting from the war. Larger problems, however, will doubtless face them during the coming year. Those seamless plants which were using silk or nylon were affected by the withdrawal of these two yarns. A larger number of seamless plants have been using in recent years elastic yarns in the tops of men's and children's hosiery principally. On December 11, 1941, the director of priorities suspended the further processing of elastic yarns. This order permitted the makers of such products to complete the yarns then in process and to sell such stocks as they had. It also permitted the users of such yarns to continue the use of stocks on hand. However, a new order was put into effect on March 29, 1942, which only permitted the use of such elastic yarns as were already on the machines, but prohibited substantially the use of all other stocks. An inventory of such stocks is now being made by WPB and it is anticipated that such stocks will be acquired by the government as was done previously with the raw silk stocks.

"Our seamless products consist principally of men's and children's hosiery, and these are made mostly of cotton yarns, with rayon yarns playing an important part. Such mills as established users of rayon yarn, have had their supplies of such yarns reduced approximately 25 per cent as a means to creating the pool of reserved yarns which are being allocated to former

(*Continued on page* 136.)

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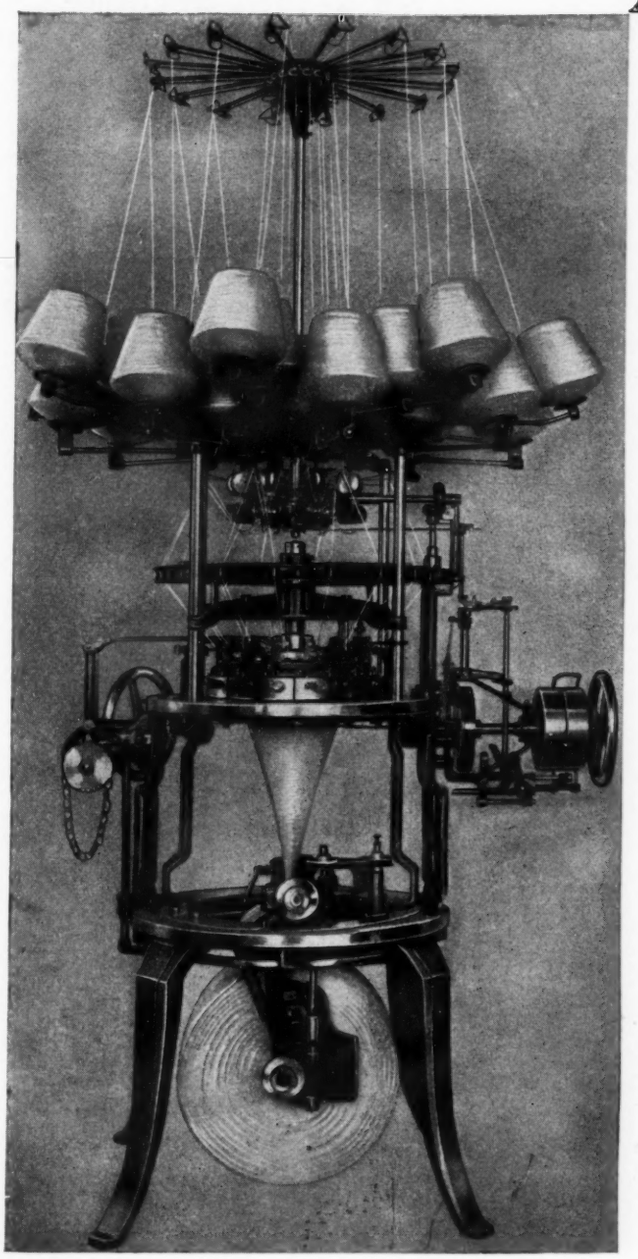

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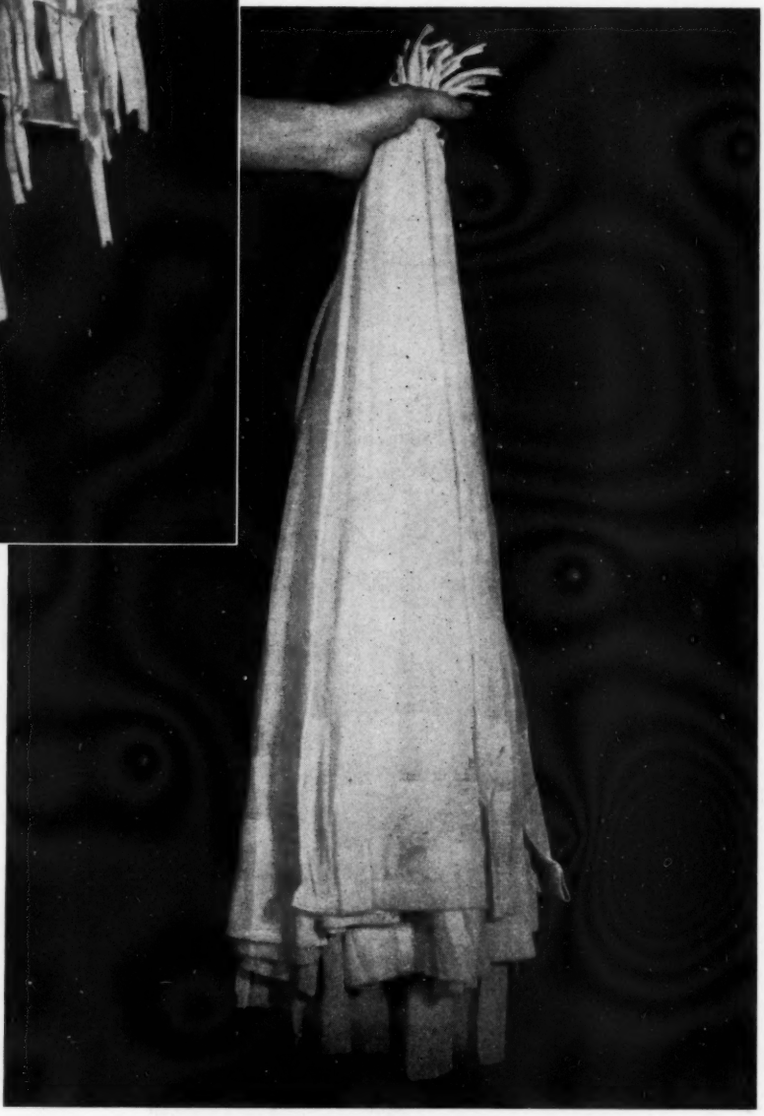

Do not make the work of the next employee any harder. This reduces his earnings.

This is the ninth in a series of pictorial presentations of this nature. The previous eight installments have already appeared in "Cotton's" Knitting Section. For information on how reprints of them, full size for posting, may be secured, address Editorial Dept. "Cotton", Grant Bldg., Atlanta, Ga.

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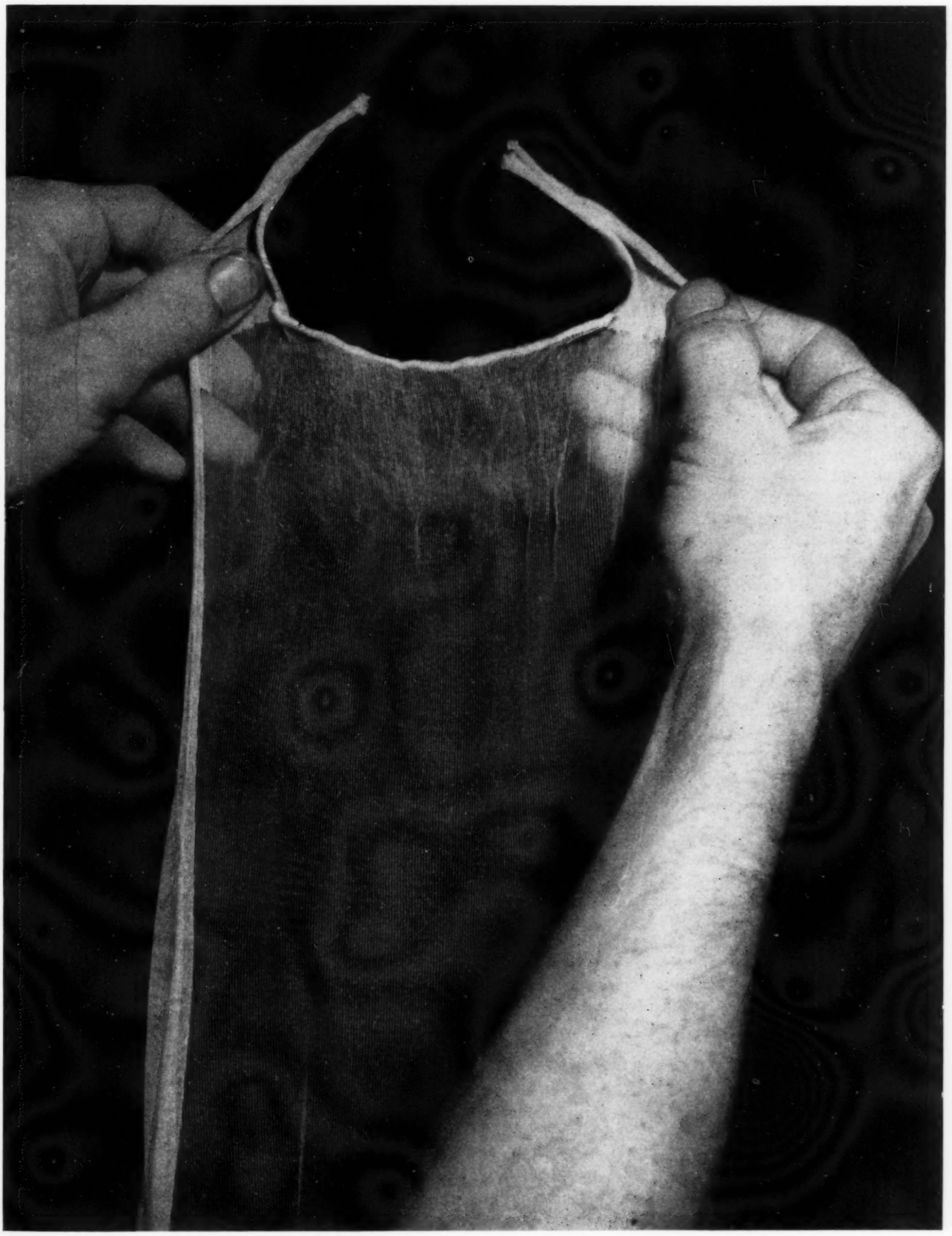
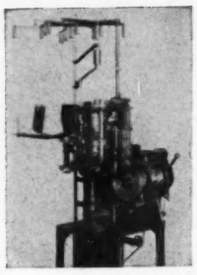


KNITTING KINKS

The Komet Machine

Article 16



IN THE previous installment of this series in the May issue of COTTON we completed the discussion of the rib stitch cam section for a 4-inch Komet machine. In the present article we shall cover the welt stitch cam section and this will conclude our remarks insofar as the various cam sections are concerned.

The Welt Stitch Cam Section

The welt stitch cam section supplies the means for broad rib knitting on the auxiliary feed, its operation, care and adjustment being very much like the rib stitch cam section. There are some things about this section which differ from the rib stitch cam section and we shall attempt to call attention to these points. Shown herewith are two views of the welt stitch cam section; these are reproductions of Plate 25-L of the Komet and Links-and-Links catalog of parts. The upper portion shows the inner side of the section and the lower portion the outer side.

The Latch Guard Bracket

The latch guard bracket (204393) differs from the one on the rib stitch cam section in that it is fastened rigidly to the section and no means of adjustment or change in its setting are provided. Just why this was done the writer does not know, perhaps it was a custom started by the Bentley people on the original Komets and needed no change. We do know that Scott & Williams Komets run entirely satisfactorily with this arrangement, so from a machine fixing standpoint we can safely dismiss the question as to why it was done. Due to the latch guard bracket not being adjustable, considerable care must be taken at the factory in fitting the lower and upper latch guards. The writer knows from actual experience that this important factor is given careful attention. The Komet fixer in the mill will profit by bearing this in mind.

The Latch Guards

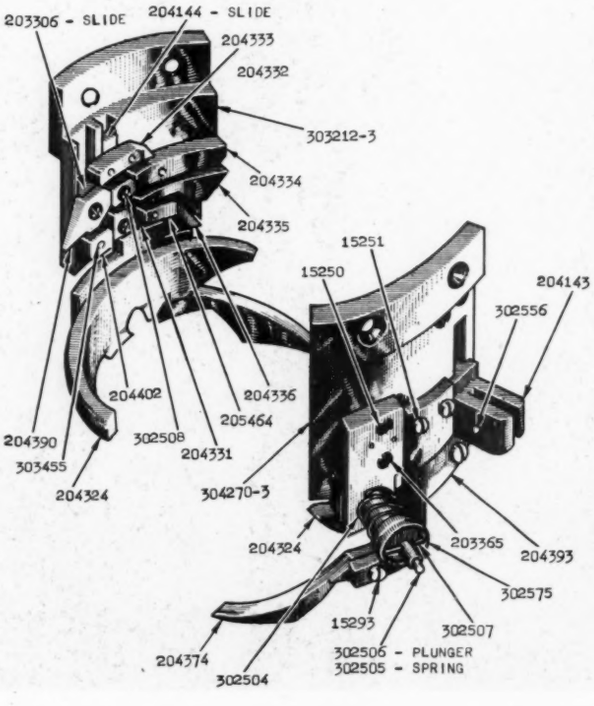
Foremost of all latch guard troubles are damaged, bent or broken latches; both rib and frame latches can be and are affected. Such troubles usually show up after a machine has been jammed up, needles broken and the like, caused by press-offs, needles becoming loaded up, two-feed mechanism out of time, slider butts becoming lodged in the races, etc., etc. In most instances, the latch guards will be damaged, become rough at some point, and the rough place will cause bent or broken latches and very often other knitting troubles. When these things occur, irrespective of what may have caused them, the fixer's best bet is to remove the latch guards, inspect them carefully (using a magnifying glass if necessary) and do a first-class re-polishing job before replacing the latch guards.

Now that is what *should be done*, but this is what usually *is* done: bad needles, broken sliders and damaged sinkers are removed, new ones put in and the machine started up—and the fixer hopes all will go well. If the damage has been severe, the machine will not run, latches will be damaged, seconds and waste will begin to pile up, and finally the fixer as a last resort will inspect the latch guards; yes, sir, he finds the rough place on the latch guard and polishes it carefully and now all is well. He did in the end what he should have done in the beginning. All of which comes under the very broad heading of experience, and unfortunately some of us have to get it the hard way.

One of the important places insofar as rib latches are concerned is where the lower and upper latch guards join. At this point the rib bolt cam is raising the needles upward, the rib latches being up (or open) and riding against the inner surface of the lower guard, then passing upward to the upper guard. At

PLATE 25-L KOMET

WELT STITCH CAM SECTION FOR A 4" - 24 GUAGE KOMET MACHINE WITH OR WITHOUT REVERSE WELT



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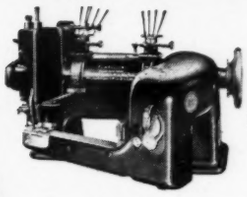

Type 300
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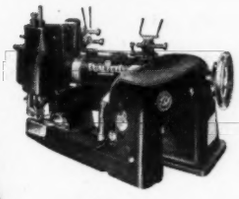

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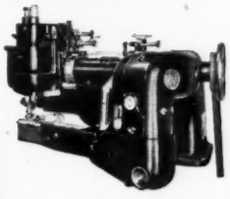
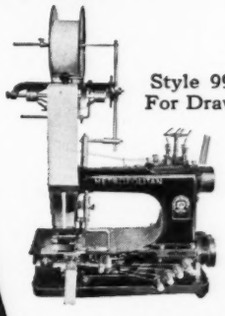
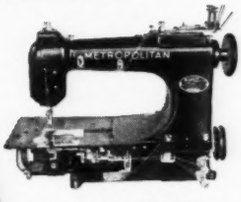
Barrack Bags



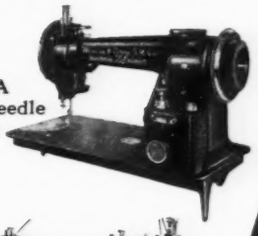
Type 700-B
For Shirts
and Trousers



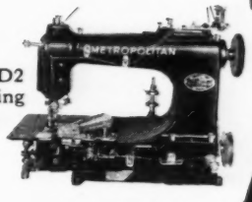
Style 994-BX-31
For Drawer Bands



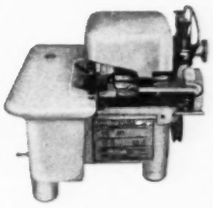
Style 951-C2
For Shirts and
Mosquito Bars



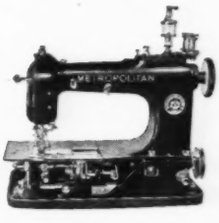
Type 10-A
For Single Needle
Stitching



Style 950-CDD2
For Split Tubing
Attaching



Type 803
For Seaming,
Hemming
and Serging



Style 970-CDD
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Style 992-XX-23
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the point where the guards join, the lower guard is somewhat thicker than the upper, this slight step prevents the spoon of the rib latches from digging into the line where the guards join. When it becomes necessary to polish the latch guards, make sure not to buff the lower guard excessively; reducing the step-off will shorten the useful life of the guard and when the lower guard finally becomes flush with the upper, rib latches will bend and the lower guard will have to be replaced.

Bear in mind that both latch guards are used to help turn the latches at various points after they have been partially turned by the stitches. Keeping the guards well polished at such points where the latches first come in contact with the guards and from there on until the latches are safely behind the guards, will help keep your Komets turning out more good work.

After new machines have been running for a month or more, the latch lines can be readily seen. If the lines are heavy or have the appearance of a small groove, this would indicate that the latches may be pressing a bit too hard against the guard. Polishing the guards with a fine grit buffer will correct this but in using it, remove as *little* stock from the guard as possible. The danger in polishing guards comes more from this being *overdone* at points where it is *not necessary*, and where the amount of stock is limited to begin with.

The other day while re-polishing a latch guard, one of our Komet fixers asked the writer, "How long do you think these latch guards will last?" Our answer was, "We don't know." We do know, however, that with more than 100 Komets in operation, we have replaced *only two* latch guards to date, and these were broken through no fault of the machine or the fixer. That we feel is a very fine record and speaks well for the machine builders. Latch guards will stand plenty of use and a certain amount of abuse. Let us make sure the abuse is not intentional or the result of carelessness.

The Rib Bolt Cam

The rib bolt cam (204336) raises the sliders up so the knitting butts will pass over the rib stitch cam and knit broad rib fabric on the auxiliary feed. The in-and-outward movement of the rib bolt cam is controlled by the 2-feed racking mechanism. It remains in action while 2-feed knitting is being done, in fact, its movement determines when 2-feed knitting starts and stops. The cycle of movement of the rib bolt cam is in three positions: fully-out, halfway-in, and fully-in. A screw adjustment is provided which operates against the plunger (302506) permitting a very close adjustment. Proper adjustment can be made only at the halfway position either going in or coming out. At this point the rib bolt cam should be set to just clear the short knitting butts. Keep the face of the bolt cam as near to the butts as possible without actually rubbing against them. If for any reason this setting is changed, it should be checked at all three working positions, that is, going onto the heel, coming off the heel, and going onto the toe. A slight variation in the steps on the operating cam may cause the bolt cam to vary in clearance at one of its respective places or times of movement. For this reason we suggest making the setting at one halfway position and then checking the others and give or take if necessary. A very good habit which any fixer can acquire is to check the rib bolt cam every time the welt stitch cam section is removed. If a slight gap is beginning to form where the slider butts come in contact with the cam, remove it by polishing. Look for broken butts or foreign matter which may interfere with its free movement. Remember the bolt cam is *pushed* in by cam and lever action but it is *pulled* out by *spring action*, therefore it must work freely. A few drops of oil at regular intervals should not be forgotten.

Immediately to the left of the rib bolt cam we see the guard cam (205464). This cam was not supplied on some of the older Komets; later models come equipped with it. This cam is just one of the many little things which help to make the Komets run better. Its purpose is to assure control of slider butts after they have been raised by the rib bolt cam. It helps to form a race for the butts to travel in until they reach the rib stitch cam. This cam can be fitted to any older model Komet at a very small cost, and it will more than pay for itself in a very short time.

The Rib Stitch Cam

The rib stitch cam (204331), guard cam (204332), and slide (204144) are identical with those used on rib stitch cam section shown on Plate 23-G and described in a previous article. Rib stitch cams require little attention other than an occasional re-polishing, and keeping them tightened securely to the slide. Should it become necessary to replace a stitch cam, make sure that the slider butts will pass between the stitch cam and the guard cam immediately above it without binding. In case the slider butts bind, polish off the stitch cam slightly, not the guard cam. Make sure that the stitch cam slide moves freely; foreign matter or broken slider butts may cause it to bind and affect broad rib knitting.

The Guard Cam Slide

The guard cam slide (203306), upper guard cam (204390), and lower guard cam (204402) differ somewhat from similar parts used on the rib stitch cam section. This slide is held stationary in the section, whereas the slide in the rib stitch cam section moves up and down, working in conjunction with the stitch cam slide movement.

Sometimes when the lower guard cam screw (303455) works loose or it becomes necessary to remove the cam or slide for any reason, there may be some doubt as to the proper setting of the slide. On most machines the lower guard cam screw (303455) will be set so the outer edge of the screw head will be about 1/32-inch *above* the bottom part of the slot in the cam section. This is a fairly accurate guide for proper position of the slide insofar as knitting purposes are concerned. However, a slightly *lower* setting on some machines will cause rib latches to be bent while the welt is being made. This occurs while the rib needles are inactive in the upper cylinder and the welt clearing cam is out. The lower guard cam

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(204402) must be high enough to prevent the rib latches (which are down at this time) from striking the dividing cam as they pass by. The clearance at this point is limited, to be sure, but no trouble will develop if the setting is right. This particular trouble is difficult to locate, due to any rib latches which have been bent not showing up in the knitted fabric until 1x1 top knitting begins, or immediately thereafter.

The Stitch Cam Slide

The stitch cam slide provides the means for raising or lowering the rib stitch cam, being controlled by the rib stitch adjusting bar and adjusting cam (not shown herewith). The slide itself requires no particular attention other than seeing that it moves freely up and down. Broken slider butts or other foreign matter will at times become lodged in places where it may prevent free movement of the slide and thus affect broad rib or 1x1 knitting. As a rule, sticky slides cause wavy or unbalanced broad rib knitting or extremely loose 1x1 knitting due to the slide not dropping down after broad rib knitting is completed.

Remember also that the upward movement of the stitch cam slide is limited. Check the rib stitch adjusting screw in the leg knitting position after adjustments have been made while sizing, to make sure no undue pressure is placed on the rib stitch adjusting bar. When the rib stitch cam slide has been pulled fully up to get the desired looseness in the broad rib stitch, it would indicate that too much tension is being used on the yarn. Under normal conditions the stitch cam slide has ample range of movement to knit yarns of reasonable count for the various gauges, if the stitch adjusting facilities have been fully utilized and the desired looseness of stitch has not been gotten, it's time to look for trouble elsewhere.

Many seamless machine fixers pay little attention to yarn tensions, and Komet fixers are no exception. Some actually believe that excessive tension will prevent variation in sizes. Komets will run better with a *moderate* tension on yarns, and it is very important to have an equal amount of tension on the respective feeds. In making plaited numbers the question of yarn tension presents a somewhat different picture. Here, too, the tendency will be toward having too much rather than too little. One thing is certain: yarn tension has much to do with stitch formation, and after all is said and done, stitch formation row after row, is what it takes to make socks.

Up to now we have covered the major parts of the 2-feed plain Komet. The next few articles of this series will deal with various plates which have been omitted thus far. Following these we shall take up Links-and-Links machines.

K. O. METZ

(Editor's Note: In addition to his regular discussions on the mechanisms of the Komet and Links-and-Links machines, the author of this series will be glad to receive any specific question or problem from any reader pertaining to these machines.)

National Association Convention

(*Continued from page* 126)

users of silk and nylon. In this respect these seamless mills are in no different position than the established users of rayon yarns in the weaving field."

Mr. Constantine reported that "'the cotton yarn situation does not look good. The growing difficulty in securing cotton yarn is traceable to the enlargement of our armed forces and to the heavy use of cotton goods of various kinds by the army and the navy. The procurement of cotton yarns will become increasingly difficult. This means that seamless operations, which made all-time records in 1941, should prepare for reductions which in time may equal those already applying to the full-fashioned branch."

As to the hosiery industry's contribution to war needs, Mr. Constantine said, "during the two years since June 1940, our industry has been called upon to supply the armed forces with approximately 140,000,000 pairs of army and navy socks of various constructions and for different specialized uses. All invitations coming from both branches of our armed forces have been heavily oversubscribed by our manufacturers and contracts so entered into have generally been fulfilled on schedule."

"The General Maximum Price Regulation was issued by the OPA on Tuesday, April 28, 1942. It becomes effective for manufacturers and wholesalers on May 11 and for retailers on May 18. * * * The regulation is intended to check a steady rise in costs and prices which have gone up approximately 15 per cent since December 8, 1941, when we entered the war. It takes the month of March 1942 as its basis and it is intended to freeze the price structure existing during that month. The highest price at which an article was delivered in March 1942 establishes the ceiling for the seller. If a given article was not delivered during March 1942, but an offering price on such article for delivery during March 1942 had been made by the seller during March or previous thereto, such offering price becomes the ceiling. If an article was neither delivered in March 1942 nor an offer to deliver in that month made, the seller may take as his ceiling the highest price at which his nearest competitor delivered or offered to deliver in March the same or a similar article. If the article is a new article and was not delivered or offered for delivery during March 1942, and the provisions already mentioned do not appear to be adequate, procedure is provided by which the seller may petition for a ceiling price on such article and be governed thereby.

"An order as far-reaching as this regulation, embracing innumerable articles and relating to countless situations, cannot possibly be put into effect without creating many serious difficulties and revealing problems which had not been foreseen. It is to be assumed, therefore, that amendments and additions to this regulation will be issued from time to time by the administrator."

The nominating committee's report, unanimously adopted, returned to the board of directors D. K. Chalmers, of Holeproof Hosiery Co.; Hugo Hemmerich, of Berkshire Knitting Mills; Irving K. Hessberg, of Van Raalte Co., Inc.; and Nathaniel Judson, of Mock, Judson, Voehringer Co., Inc.;—and added a new member, Robert T. Amos, of Amos Hosiery Mills, succeeding Charles Chipman.

The board of directors unanimously re-elected the officers of the association, as follows:

Irving K. Hessberg, chairman of the board; P. W. Eshelman, vice-chairman; J. J. Kronenberg, vice-chairman; Earl Constantine, president; Nathaniel Judson, treasurer; and Reuben C. Ball, secretary.

TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

General Maximum Price Order Affects Knit Goods Causing Some Retail Reductions and Pleas to Wholesalers and Knitters to Take Part—Manufacturers Grant Compromise on Cost of Living Wage Request—Army Expansion New Factor in Business—Hosiery Shipments Gain

Philadelphia, May 16, 1942

ONE OF THE MOST far-reaching measures ever promulgated by the Government became effective this month when the maximum overall price act went into effect which set the selling levels for practically all goods. Affected along with others were manufacturers of knit goods with hosiery, underwear and outerwear plants beginning May 11 to operate under the legislation so far as they were able to interpret it. That interpretation would be necessary came at the turn of the month when there was uncertainty whether Government contracts such as goods bought by the Army Quartermaster Corps would be affected so that it was expected this point would have to be cleared up along with others such as what price limit would be set on seasonal goods. The latter was recently cleared by an amendment to the act by the Office of Price Administration. In the meantime, shipments of all types of hosiery for the first three months of this year registered an advance of 9 per cent over the same weeks a year previous. Production of underwear in March was slightly larger than in the same month a year previous and with a constantly increasing percentage going to the armed forces.

Full-Fashioned

For the first three months of this year shipments of women's full-fashioned hosiery dropped about 13 per cent compared with the same weeks a year previous but in addition to this the last month has seen the position of such manufacturers become much more difficult.

In the first place they have been confronted with Government ceiling rules that make them sell at the highest March level and yet at the same time these manufacturers, at least those having contractual relations with the union, have been forced to pay higher wages. The American Federation of Hosiery Workers, after a wage tribunal studied the matter, agreed with the Keystone Hosiery Manufacturers Association, composed of Berks County knitters, that a 6½-cent per hour cost of living wage increase should go into effect. If this is followed in other sections of the hose industry it will mean at the same time fixed price ceilings for their goods have been ruled, manufacturers are forced to pay higher wages and other items of cost. It brings up the old question of whether a general ceiling will work if labor costs are not stabilized and this is one that most in the trade feel will have to be taken up in more energetic fashion by the Administration if genuine stabilization instead of inflation is to be achieved.

After the overall price maxima went into effect some retailers reduced all-nylons from $2.25 to $1.95 which was their March peak and other numbers were also cut so that manufacturers soon felt pressure from retailers to help out. In the first three months of this year gains in shipments of part-silk, part-nylon and rayon and cotton constructions were not enough to offset the heavy decline in shipments of all-silks and all-nylons. In March, full-fashioned lines made from rayon accounted for one-third of the total with such yarns having a higher twist and finer denier to make rayon full-fashioned goods now produced much superior in every respect than the earlier types.

Half-Hose

Notwithstanding a sharp increase in the production of men's slack type socks for the first three months of this year total shipments of all types of half-hose in this period were almost 20 per cent under the same period a year previous. Shipments of slacks jumped because of larger demand for this type socks and also because the trade was doing its best to get such goods made early and in large amounts before the elastic yarn ban went into effect. Although new methods of obtaining elasticity in the top are being tried as yet there is nothing that is as good for this as elastic yarn so that the attempt was made to get large amounts of such goods made up before the ban went into effect.

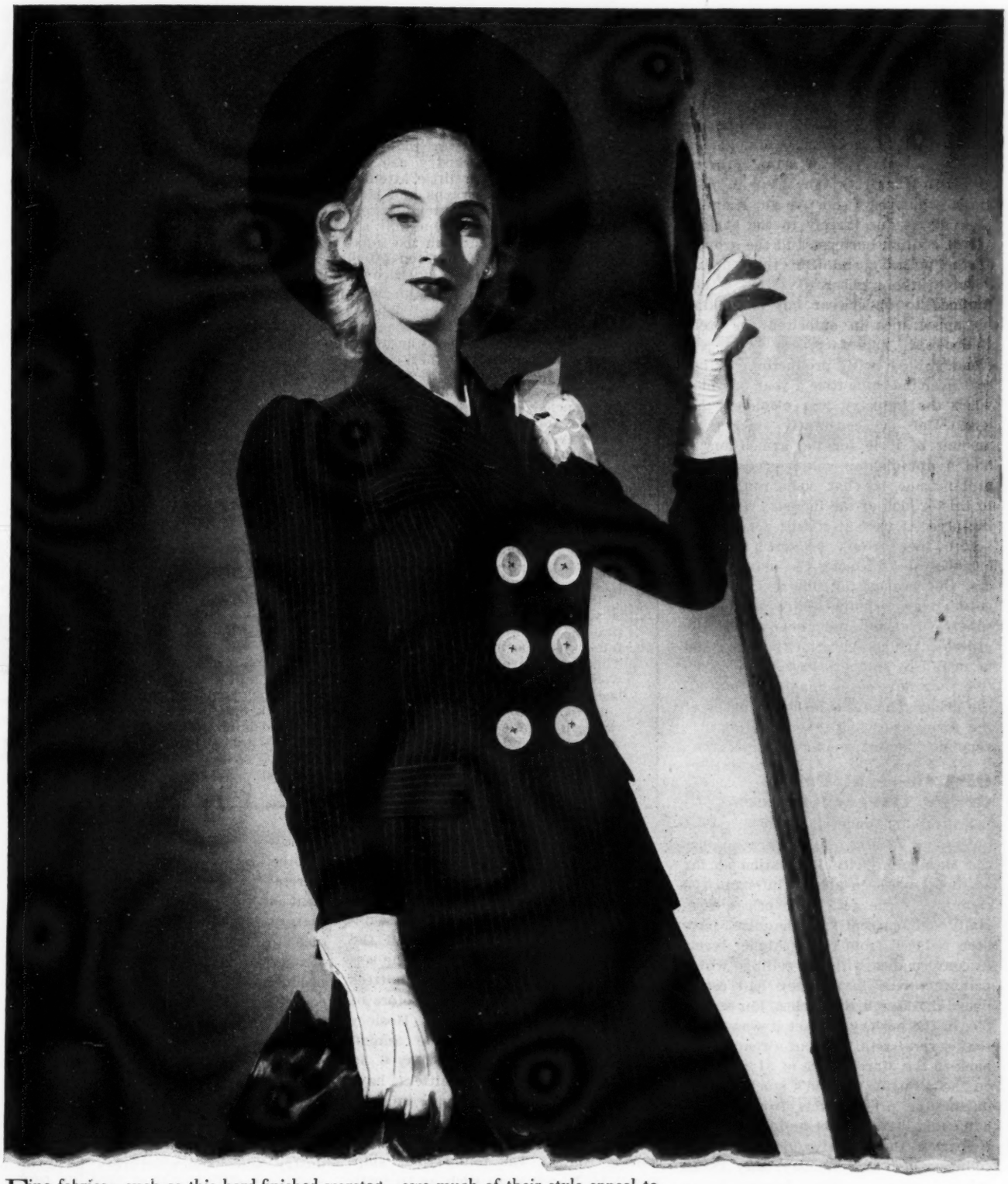
Shipments of silk half-hose, of course, fell off sharply and gains were not so great in the types of half-hose taken by the Army so that overall shipments fell off. But there was a fair sized gain in rayon half-hose shipments showing that as in women's full-fashioned numbers the man-made fiber is taking the place of silk. Larger demands for wool and mercerized half-hose for the armed forces are due as plans are being announced for expanding the size of the Army, just about doubling what we have recently been buying for. Makers of cotton half-hose in instances are working entirely on Army orders, a large such contract calling for about 13,000,000 pairs having just been announced at local depot.

Seamless

There has been sustained activity among manufacturers of women's seamless hose with shipments running about 10 per cent ahead of the same time last year and with largest being in rayon numbers which are being turned out more than twice as actively as a year previous. There were about two pairs of rayon seamless being made for every one of cotton based on first quarter data while shipments of all-silk merchandise have declined to a very small total and fast going out altogether. The progress in making rayon hose has been remarkable both as to quantity and quality, so much so that it has surprised even manufacturers. It has been difficult for knitters to obtain enough rayon yarns and then they have been confronted with very difficult technical problems in regard to twist and finish so that it is a subject for encouragement that the gains have been so outstanding with much greater ones just ahead.

Underwear

The most important event in the underwear market this or any month was



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the becoming effective May 11 of the ceiling level established in most lines by Office of Price Administration. Two main developments have occurred since that time in the underwear trade: First, a sharp decline in the number of inquiries in the market and also a tendency on the part of manufacturers to realize that they now have to take steps, and very shortly, to simplify their styles due largely to the shrinkage of civilian business and the growth of the military end. But this cutting down of the number of styles is not confined to underwear but is making its appearance in outerwear as well. Underwear manufacturers are extremely busy with production 14 per cent over the same time a year previous when the industry was also very active. But a constantly increasing amount of it is for the armed forces and a diminishing volume for the civilian trade so that some authorities in this branch of the industry are making predictions that it will not be long before there won't be much civilian business at all among the manufacturers. One reason for this is that sales cotton yarn spinners are unable to supply yarns for underwear unless the orders carry a high priority rating and in instances spinners have been so active they have been unable to take all the priority business although needs of the Army are being taken care of in a very satisfactory manner.

OPA General Price Order Affects Knitters

Knitters of underwear, hosiery and outerwear have begun to operate under the Maximum Price Regulation so far as they have been able to interpret the meaning of the act. Some prices especially on current merchandise have been reduced from recent higher levels in conformance with the ceilings which manufacturers found they had established in March deliveries. For example, in the hosiery market it was found that several retailers had already gone back to the March price of $1.95 a pair on the all-nylon women's stockings, reducing the price tickets from $2.25 a pair. Retailers in this action were anticipating the effective date of their ceilngs which was Monday, May 18. In other hosiery numbers buyers began to report price revisions on some numbers such as men's socks and other changes are expected by buyers as manufacturers obtain more information on which to make changes.

The sentiment of the industry as a whole is to conform as quickly as possible to the purpose of the order. Manufacturers in the branded end of the market also have been gradually adjusting their prices. Four special committees from the hosiery industry will be set up to study and handle the problems with manufacturers under the price ceiling order. These committees will represent the women's full-fashioned branch, the women's seamless branch, men's half-hose and the children's and infants' branch. The setting up of these special committees was voted by the board of directors of the National Association of Hosiery Manufacturers following the annual meeting of the organization May 6. In the meantime, several knitters have advised their customers regarding the act. Standard Knitting Mills sent out an announcement to their customers stating that it was found their shipments in March were such as to justify prices under the order so that it was planned to continue billing and shipping all spring orders on the basis of prices at which such business was booked.

Maximum Price Order May Curtail Styles

Fewer styles in all lines of underwear are foreseen by manufacturers as a certain result of the ceiling order. The trend toward style simplification has been hinted for some time past because of increasing business requirements. Officials close to Government buying offices have indicated that manufacturers would have to face a radical cut in the number of styles because of demands on production by the Government. The ceiling price order has brought this matter more clearly before manufacturers and they appear more resigned than ever to the change. The cutting down of lines of underwear manufacturers now indicated will also apply to other knit goods including hosiery and outerwear. In the underwear industry some manufacturers have already started to cut down their lines and they see no great difficulty in this or any serious upset to merchandising, considering the seriousness of other conditions going with the war. Duplication of men's staples, for example, such as in light weight athletic shirts, knit and woven shorts, has become a fixed part of the business for years. The varying styles went in part with the necessity of fitting different price brackets as well as to meet various demands of consumers. While this was

FORECAST

(Opinion submitted by COTTON's market correspondent)

Philadelphia, May 16, 1942

IN AN ALL-OUT WAR there are casualties on the home front as well as on the sea or the battlefields throughout the world. This is more of an all-out war than the first World War and as such the ramifications on industry are more drastic and widespread. During the first World War little attempt was made to hold prices down and raw materials and yarns and goods rose rapidly and to great heights. This time there are attempts being made through ceilings to prevent such a runaway situation that always carries in its wake hard times for all that went through the inflation. The most important step in this direction that has ever been attempted is the recent overall price ceiling order of the Office of Price Administration.

This has already had and will in the future have greater effects on textile manufacturers and distributors. It fixed prices at the highest levels for March and this means that even where there were no price ceilings for textile manufacturers there is one now because retailers cannot pay more than they can come out on under the new retail ceilings. In fact, some retailers have already asked manufacturers to reduce prices so the retailers will not have to suffer through any lag in retail prices compared with the March one of the manufacturer. The outlook for textile manufacturers is not too good from a profit standpoint even though the OPA has said that cotton manufacturers have large margins and that they could stand an advance in cotton while yarns and goods stood still.

Manufacturers do not have all the items going into their costs under a ceiling but they do have one on their own selling prices and until this is corrected by a ceiling on taxes and wages there is little chance of anything except for margins to narrow. Textile manufacturers are willing to make sacrifices in war but they ask that no pressure group such as labor unions be exempt from the same treatment.

The outlook for manufacturers making mainly civilian goods becomes less favorable as the war goes on and there is nothing to retard this until peace comes. Manufacturers should endeavor to get into some line of war work for the duration where the authorities at Washington do not permit them to obtain enough raw materials to operate on. The alternative is that they will be forced to close. In this category are woolen and worsted manufacturers, including knit goods, which have been cut down on their wool allotment to such a point that they cannot operate to advantage unless on war work and in this event larger raw allotments are procurable. This condition is becoming more general with the trend accelerating as the war goes on. Prices in the future may be frozen but profits are not going to be so that machinery is apt to be running on war goods at about at cost.

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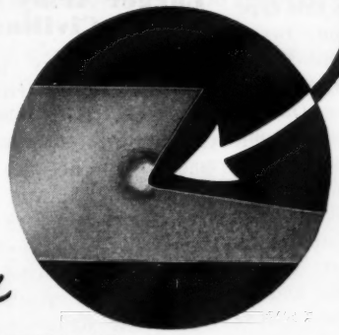

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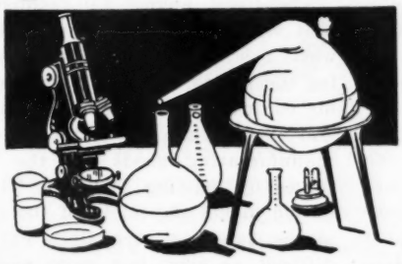

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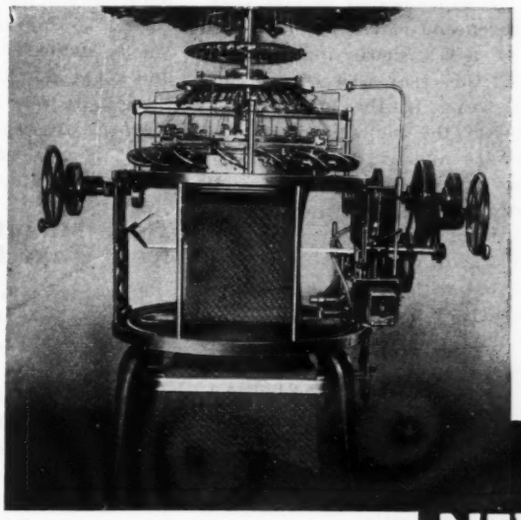

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regarded as acceptable in peacetime under war conditions with the Government taking such a large amount of such goods, it is admitted that many changes can now be made. As an example, it is felt that it is not necessary to stock all the different kinds of athletic shirts recently produced in addition to the staple numbers.

Underwear Production Still Expanding

Underwear production for the first quarter of this year, January through March, was sharply over the same months a year previous, according to Government statistics. The gain in knit cotton and wool was 14 per cent. There was 7,087,000 dozens of all kinds of underwear of knit cotton and wool construction produced during the first quarter compared with 6,227,000 dozens for the same period of last year. In the woven end of the industry production of men's shorts for the first quarter of this year was 18 per cent over last year. In the circular knit rayon end of the industry production of underwear numbers was up 12 per cent over a year ago for mills using purchased cloth while manufacturers knitting their own cloth registered a 24 per cent gain during the first quarter compared with the same months a year previous. It is realized that Government buying of various kinds was the largest single factor in bringing about the increase in both the knit cotton and wool as well as the woven divisions. The increases registered in March both in production and shipments were more moderate than during the earlier months.

Rayon Full-Fashioned Shipments Expanding

Out of a total of 3,127,000 dozens of women's full-fashioned hosiery shipped by manufacturers in March, rayons accounted for over one-third. The comparatively new rayons were the largest single item in the list of full-fashioned numbers while silks, including all silks and part silks, were the next largest item with nylons making up the remainder. The rise in rayon production to this significant figure proved a surprise even to those in this branch of the industry.

The supply of rayon yarn has been limited so that with the production expanding so noticeably these figures have been received with approval of all concerned. It stands out as a remarkable development for an industry that has been hit harder than most by the war. First, raw silk was taken away from the hosiery industry and then nylon yarns on which dependence had been placed after the loss of silk. For the first quarter of this year rayon full-fashioned shipments amounted to 28 per cent of the total.

Total shipments of all types of hosiery for the first three months of this year registered a gain of 9 per cent over the corresponding period a year previous. Shipment gains were apparent in all major divisions except women's full fashioned hosiery. In this type gains in part-silk, part-nylon, rayon and cotton constructions were insufficient to overcome the heavy decline in all-silk and all-nylon types. On the other hand, a notable decrease in women's seamless silk shipments were more than offset by gains in seamless rayon, cotton and wool hosiery shipments. Increases in men's half-hose and slack socks along with those for bundle goods, athletic socks, children's and infants' hosiery, anklets and ribbed goods, all helped to account for the seamless shipment gains that have occurred so far in 1942. Shipments of slacks increased almost 50 per cent and it is felt that manufacturers of these lines were speeding production in view of the ruling on elastic yarns which is now such a serious handicap to such manufacturers.

Hose Manufacturers Grant New Wage Increases

The wage tribunal which considered the application by the American Federation of Hosiery Workers to apply in nine mills in Berks County, Pa., affiliated with the Keystone Hosiery Manufacturers Association, rendered a decision May 8 granting an increase of 6½ cents an hour to workers in the nine mills effective at once. The committee representing Branch No. 10 of the union, had asked for a 15 cents an hour cost-of-living wage increase. It is believed this will be the last wage schedule change in these mills during the war. A similar wage tribunal has had under consideration a wage increase of this amount requested by the union from the Full Fashioned Hosiery Manufacturers of America, Inc., whose headquarters are located in Philadelphia and whose members are located throughout the industry with the exception of the South.

Waldo E. Fisher of the University of Pennsylvania is the third member on the wage tribunal that will hand down a decision in the latter application, the other two being George F. Lang, president of the Full Fashioned Hosiery Manufacturers of America, Inc., and Alexander McKeown, president of the American Federation of Hosiery Workers. This request of the union was filed last December and was again discussed in February but since has been sidetracked while other matters including new rate for rayon goods, mesh and knitting scales on back-rack machines were decided. Several in the industry believe that the latter mill group will grant a compromise wage increase approximating that announced by the tribunal in the Keystone Hosiery Manufacturers Association case.

Larger Army Means Fewer Civilian Goods

Undersecretary of War Patterson disclosed in testifying before the House Military Affairs Committee the army is building its strength up to 6,000,000 men. While no date for the attainment of this figure was given by Mr. Patterson it contrasts with an army of 3,600,000 men on which current purchases of uniforms and equipment including knit goods have been based. The new figure would nearly double present requirements so that further restriction on civilian orders for underwear and half-hose is in prospect. In these lines there already have been frequent instances where civilian lines were withdrawn altogether because the mills involved have such heavy military contracts. The best that most manufacturers can do at present on new business is to promise token shipments at unspecified intervals. In view of the plans to expand the army further this tight situation in civilian goods is bound to become much more acute during the remaining months of this year and as long as the war lasts.

War Work Curtails Production of Hose

The trend among full-fashioned as well as seamless hosiery mills to war work has become more apparent during the month with the former obtaining contracts for precision instruments and shells while the latter have been manufacturing goods for the armed forces by existing facilities. This situation makes the plight of the smaller stores handling such lines extremely difficult as they find more and more of their sources of supply drying up. In other cases, smaller jobbers and retailers are finding the question of supplies more difficult to handle in view of some mills now desiring to confine civilian sales to the larger outlets. There is one hopeful feature in the position of the smaller hosiery store and that is the popularity of slacks both for war and civilian work which promises excellent business at least during the summer on anklets, slack socks and knee lengths. There appears to be at the present time sufficient of such goods to tide retailers over the warmer months.

Another angle of this situation was stressed by Taylor R. Durham, secretary of the Southern Hosiery Manufacturers Association, who said the

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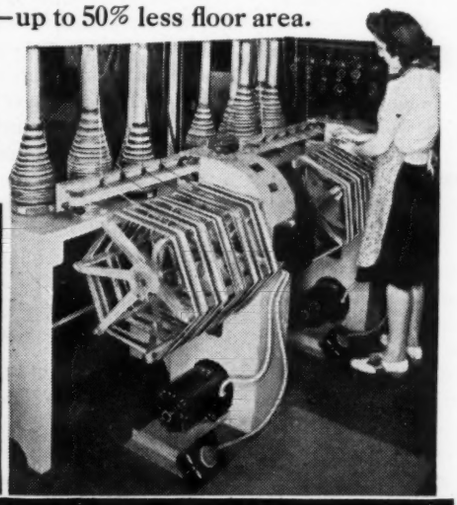

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hosiery industry faces even further curtailment because of actual and prospective reduction of yarn supplies. He said that the order of the War Production Board directing the textile industry to convert even more of its machinery to production of war supplies may result in sharply restricting the supply of fine quality cotton yarns used in hosiery plants. He explained that makers of men's and children's cotton hose will likely be affected first and pointed out there is no immediate indication of involvement of knitters of women's rayon and fine cotton stockings in the reduced production.

Decrease in Number of Full-Fashioned Machines

There were approximately 507 full fashioned knitting mills in the United States as of March, 1942, according to a survey covering the full-fashioned knitting industry in the United States, issued by the Textile Machine Works, Reading, Pa. The survey emphasized that during 1941 close to 50 mills liquidated or changed hands. Of these 76 per cent were less than ten, and 10 per cent were less than two years old. Fifty-two new mills were established while 90 per cent of the new mills started with second-hand equipment. Seventy per cent of all full-fashioned mills operate less than 25 machines. It was estimated that as of March, 1942, there were 14,300 full-fashioned knitting machines in place in the United States which brings the equipment back to the 1929 level. Then, however, 35 per cent of the equipment was of the coarse gauge type while today this percentage is only slightly over 10 per cent. In 1929, Pennsylvania represented 62 per cent of the industry's production capacity whereas today it has 41 per cent of the full-fashioned equipment. The respective figures for the southern states are: 1929, 8 per cent; 1942, 37 per cent.

Hose Industry Begins War Facilities Survey

The National Association of Hosiery Manufacturers is undertaking a survey of all the plants within its industry for the purpose of ascertaining what excess facilities are available and ways through which such facilities may be applied to war work. The survey takes the form of two questionnaires. One of these covers the machine tool facilities and trained mechanics existing in the machine shops of hosiery mills while the other seeks facts related to applying other facilities to war work. Earl Constantine, president, pointed out the production of the industry for civilian use is already curtailed and that this is likely to be true in a larger degree as war demands increase. The skilled labor thus released could be applied to the manufacture of war articles which require skilled handling. In addition there are factory floor space and warehousing facilities for which demand will doubtless arise. While most machine shops within the hosiery industry are relatively small they frequently possess excellent machine tools needed in repairing knitting and other equipment or used in the making of parts. Hosiery manufacturers in the questionnaires sent out in this survey are asked whether they know of any articles other than hosiery that can be made on their knitting machines for war work.

Labor Situation Hits Seamless Hose Mills

Seamless hosiery mills which because of concentration on production of cotton and rayon goods have escaped the plight of full-fashioned operators when silk and nylon were withdrawn are now finding it difficult to obtain either the labor or materials to maintain their plants on a two-shift basis. Such plants are experiencing very heavy demands at present for regular items in men's and children's numbers and for women's anklets as well in keeping with the expected summer trend toward fashion in slacks. The circular knitting division could ordinarily satisfy most of the current orders if the labor supply were normal but this question is of such great concern and is affecting numerous mills so that the growing shortage of cotton yarns is becoming a secondary problem. War work is taking many of the knitters from their machines and Southern labor is reported to have been attracted by outside inducements much more so than have the workers in Pennsylvania. As the problem relates to yarn supplies, scarcity can be offset to a great extent among makers of women's seamless goods simply by shifting operations from full length goods to slack socks and anklets with a consequent important saving in yarn consumption. In ordinary times labor could be trained for circular knitting work in a relatively short period but this is not possible under war conditions.

Canadian Retailers Accept New Hose

Full-fashioned hosiery of new construction has been favorably received by the Canadian consumer. Full cooperation has been shown with the Government by manufacturers and retailers in the endeavor to conserve materials and effect economies in production, packing and distribution and in stocks carried. Hosiery colors have been limited to four shades in addition to the three basic colors—gunmetal, black and white. While this represents a 50 per cent reduction in available shades, the choice of the actual four colors is left to the discretion of the individual companies manufacturing them. The full-fashioned hosiery manufacturer, however, cannot make more than three changes per year in the color ranges so chosen. Hosiery sales have not been hurt by the restrictions and substitutions, a survey of hosiery shops in Toronto indicated. Lisles have been popular with an even greater demand looked for next fall. All stockings over the regulation length are barred and the customer who had been in the habit of buying outsize hosiery is unable to do so for the present but there is some talk in the trade that such lines will be reinstated.

Hosiery Firms Consent to OPA Price Suit

The first legal action to enforce compliance with the provisions of the Emergency Price Control Act of 1942 was recently instituted in the United States District Court in New York City by Leon Henderson, administrator of the Office of Price Administration. The defendants named in the suit were L. & B. Hosiery Company, Inc., and the Wonderwear Hosiery Co., both firms being wholesalers of hosiery. The complaint cited alleged violations of the price control schedules since February 21, 1942. The defendants consented to the entry of a decree enjoining future violations and directing compliance with the price ceilings in the sales of nylon hosiery. Counsel for the defendants announced they did not desire to contest the action and would consent to the entry of a final decree provided that the injunction applied only to wholesale sales and not to retail sales which were not affected by the price ceilings that prevailed at that time.

Tricot Knits Lead in Lines for Fall

Knitters of rayon underwear cloth report that manufacturers are showing a greater interest in tricot cloths. Mills which in the past have manufactured both circular and tricot cloths are showing a tendency to concentrate on the latter. With yarn supplies limited these mills prefer to turn out the finer goods limiting their output of tubing to small quantities needed partially to supply needs of old established customers. Knitters also find that their cutter-customers report that retailers are showing a preference for the better quality undergarment. Improvements in knitting yarns and methods

Fine knitting can go a long way towards giving a mill that much desired "name for value" in underwear. But knitting that comes up to the highest standards demands the most accurately manufactured needles—especially if speed in production is important. Torrington Needles are *machine-made*, by advanced methods, to stand up and deliver fine knitting at the highest speeds—and to give the long service that means economy. Let the Torrington skill and experience in needle manufacture help you produce underwear that meets with wholehearted customer approval from the knitting standpoint.

TORRINGTON latch NEEDLES

The Torrington Company, Torrington, Conn., U. S. A., Established 1866

Branches: New York • Philadelphia • Chicago • Boston • Greensboro, N. C. • St. Louis • Toronto

PROMPT DELIVERY IS ONLY ONE WARTIME FEATURE

ON today's rush production schedules, *ready availability* is an outstanding feature of the Torrington Needle Bearing. Thanks to a program of steady expansion, Needle Bearings can be delivered promptly in standard sizes and types to textile equipment manufacturers working *on priority orders.*

But the features that first won industry-recognition for the Needle Bearing are now important wartime advantages, too. Each one fills an immediate need, simplifying textile machinery design and speeding production.

IT SAVES TIME in installation, because it is built as a single compact unit. One quick operation presses it into place in the housing. Here is modern design for today's high speed production line methods.

IT CONSERVES VITAL MATERIALS. The Needle Bearing's small outside diameter represents a material saving in itself. And this in turn permits reduction in the size of surrounding members, conserving still more materials for needed use elsewhere.

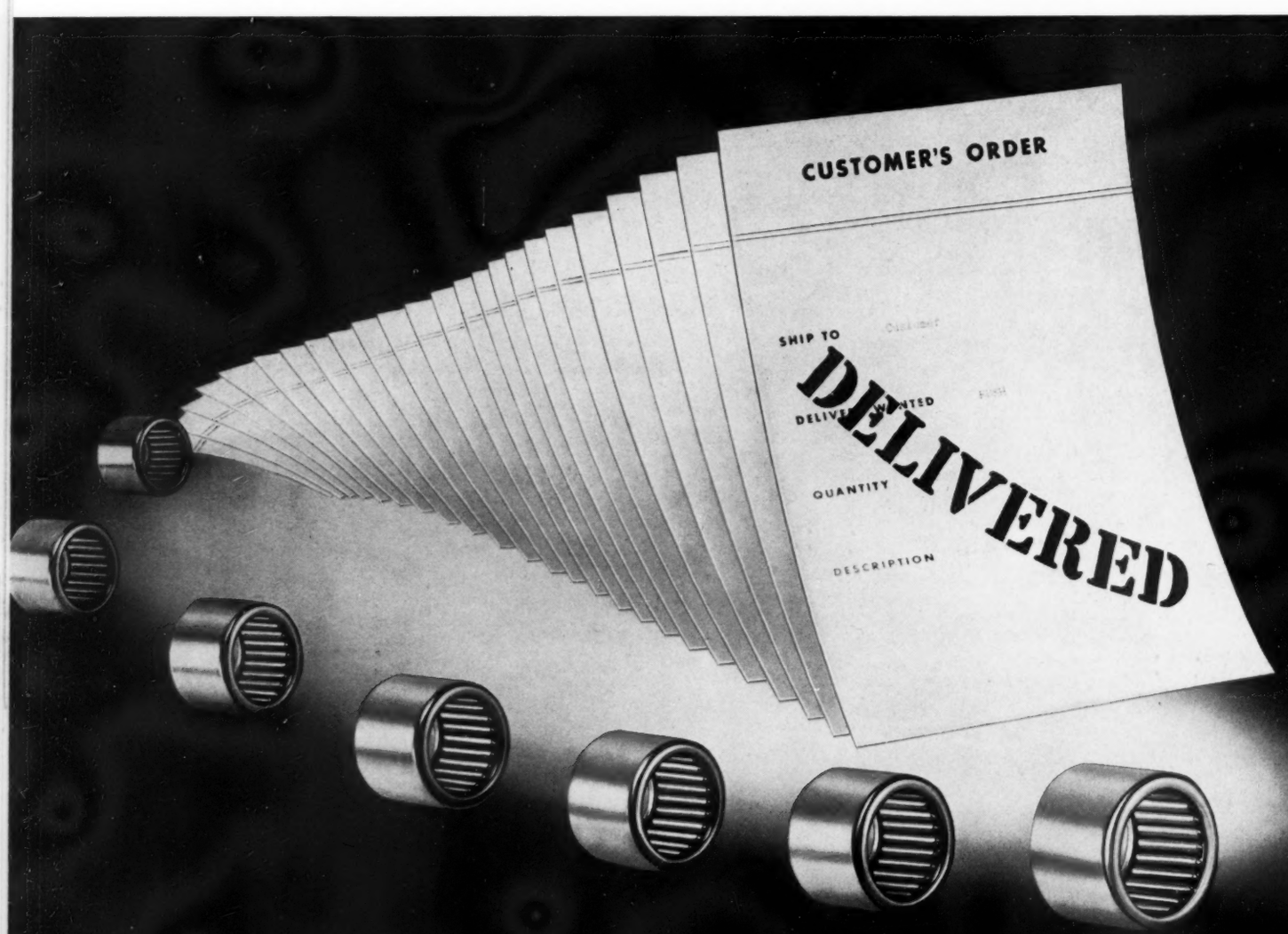
IT ELIMINATES EXTRA PARTS and assembly steps. The Needle Bearing stays in place without the aid of retaining rings, washers, or end plates. And efficient lubrication eliminates the need for all but occasional renewal of lubricant. Both of which again save vital materials.

IT IMPROVES PRODUCT PERFORMANCE. The Needle Bearing's high load capacity, low power consumption and long life make improvements possible in product design and operation, reducing manufacturing costs.

These advantages of the Needle Bearing—proven conclusively in thousands of applications—can help guard against production delays that are now more costly than ever. Find out from a Torrington engineer how easily this unique bearing, available for prompt shipment on priority orders, can be adapted to your textile machinery designs. Complete details are available in Catalog No. 115. Write, wire or phone for your copy today.

THE TORRINGTON COMPANY
TORRINGTON, CONN., U. S. A. • *Estab. 1866*
Makers of Needle and Ball Bearings
New York Boston Philadelphia Detroit Cleveland Chicago
Los Angeles Seattle Toronto San Francisco London, England

LET'S GO! U.S.A. KEEP 'EM FLYING!



TORRINGTON NEEDLE BEARING

of manufacture have made it possible for the mills to turn out tricot cloth at a price level which makes possible its use in underwear numbers where formerly novelty circular knit cloth was employed.

Artcraft Hosiery to Continue

The newly-reorganized board of directors of the Artcraft Silk Hosiery Mills, Inc., Philadelphia, has decided to continue the business indefinitely according to an announcement made by Bernard L. Frankel, chairman of the board. The late Jack Kugelman, president and treasurer of the company, in his will said it was his desire that his executors or trustees sell his controlling interest in Artcraft. However, the directors, who also include the trustees, decided to continue the business.

Nylon Proves Satisfactory Substitute in Parachutes

The United States is assured a continuous supply of parachutes for its fliers. American Chemical Society at a recent meeting pointed out that nylon is proving to be a very satisfactory substitute for silk in making parachutes. At present every part of the parachute "bustle", which a flier wears, is made of nylon except for the addition of some cotton into the harness webbing. This thickens enough to fit into the buckles previously made for cotton and linen webbing. The synthetic fabric had proved the equal of silk in hundreds of tests, it was reported, and is just as quick to open when the rip cord is pulled as silk and is probably stronger in descent.

17 Per Cent Increase in Rayon Yarn and Staple Fiber Production in First 1942 Quarter

Domestic production of rayon yarn plus staple fiber amounted to 153,900,000 pounds during the first quarter of 1942, states the current issue of the *Rayon Organon*, published by the Textile Economics Bureau, Inc. This total, while slightly less than the 155,100,000 pounds produced in the last quarter of 1941, nevertheless is 17 per cent greater than the 131,200,000 pounds produced during the first quarter of 1941.

Yarn production alone amounted to 117,100,000 pounds in the first 1942 quarter. This was slightly below the all-time record of 118,800,000 pounds produced during the last quarter of 1941, but 10 per cent greater than the total of 106,200,000 pounds produced in the first quarter of last year.

Production in both the viscose-cupra and acetate divisions of the yarn industry was lower during the first quarter of 1942 as compared with the final quarter of 1941. The viscose-cupra yarn output, however, registered only a slight decline, totaling 75,200,000 pounds in the first 1942 quarter as compared with an output of 75,700,000 pounds in the final 1941 quarter.

The principal reduction in yarn output was in the acetate division, where first quarter 1942 production totaled 41,900,000 pounds as compared with the record-breaking total of 43,100,000 pounds reported in the last quarter of 1941.

"The decline in acetate yarn output," states the *Organon*, "was due principally to a reduction in the average denier size of acetate yarn spun. The high proportion of finer denier yarns spun during the January-March period, in turn, reflects the prevailing tight supply conditions existing for some of the raw materials used by this process of rayon manufacture."

Domestic production of rayon staple fiber amounted to 36,800,000 pounds during the first quarter of 1942, a new all-time quarterly record and compared with a previous record of 36,300,000 pounds produced in the final 1941 quarter. In the first quarter of 1941, the *Organon* reported 30,700,000 pounds of staple fiber "available for consumption", namely, production plus imports. Figures covering imports, if any, are no longer available.

For April shipments of rayon filament yarn to domestic consumers aggregated 37,500,000 pounds as compared with 40,000,000 pounds shipped in March 1942, and 38,700,000 pounds in April 1941. For the four months ended April 30, shipments totaled 154,700,000 pounds as compared with 140,700,000 pounds in the corresponding 1941 period, an increase of 10 per cent.

Rayon staple fiber delivered to domestic consumers during April amounted to 13,000,000 pounds as compared with 12,600,000 pounds delivered in March and 12,000,000 pounds in April a year ago. Deliveries for the four months ended April aggregated 49,400,000 pounds as compared with 40,400,000 pounds delivered in the corresponding 1941 period, an increase of 22 per cent.

Stocks of rayon filament yarn in the hands of producers on April 30 totaled 5,400,000 pounds against 4,100,000 pounds held on March 31. "These yarn inventories," the *Organon* points out, "continue to reflect the poundage of unreleased reserved rayon held under Order M-37-c both for former silk and nylon users and for the export program."

Rayon staple fiber stocks held by producers totaled 1,600,000 pounds on April 30 as compared with 2,300,000 pounds held at the end of March.

Rayon Hose Tips for Women Consumers

The American Viscose Corporation is launching a national advertising campaign in women's magazines to give American women authentic information concerning the current rayon hosiery situation to enable them better to understand the many difficult problems with which the hosiery manufacturers have been confronted. The first advertisements are appearing in the June issue of Ladies' Home Journal, McCall's, and Woman's Home Companion.

In explaining the status of rayon hosiery at this time, the company states: "Rayon stockings are now on sale throughout the country. If you are not wearing them now, you may be soon; so here are some facts to consider. You know, of course, how beautiful and serviceable rayon fabrics have become as a result of research and the development of special yarns. Certain special yarns had been developed by us for hosiery. The machinery necessary for the production of these yarns, however, is needed for the war program. So, the rayon hosiery we had hoped for has not yet gone into production.

"In the meantime, your rayon stockings may be made of yarns not designed for hosiery, but for other uses. Using these yarns, your new stockings are constructed to give you as much wear and satisfaction as possible, under the circumstances. If your first pairs are not all you'd like them to be, don't be too critical. Remember that American ingenuity is achieving improvements in design, processing, and finishing which will surely result in your greater satisfaction."

The advertisements also include directions for the careful selection and care of rayon hosiery to obtain the longest possible wear and the greatest satisfaction.

Rayon Yarn Size

American Viscose Corporation has announced that production of Avconit No. 1, the company's new chemical size for rayon yarns that are to be knit into hosiery, will shortly be increased to a supply sufficient to size 1,000,000 pounds of rayon per month. The use of Avconit No. 1, it is stated, increases manufacturing efficiency throughout the entire rayon hosiery manufacturing process and lowers manufacturing costs.

TRENDS—YARN MARKETS

Fluctuating Ceiling for Cotton Yarns Dropped and Fixed Prices Established Making Raw Product Action Important—Worsted Spinners Mainly on War Orders with Civilian Work Cut Sharply—Rayon Yarn Producers Turn More to War Orders as Civilian Sizes Become Tighter

Philadelphia, May 16, 1942

COTTON YARNS are now selling under a fixed price which does not change no matter what cotton does. This changes from a fluctuating price basis for such counts that had been in effect during the last year and while profit margins except for some sizes in combed are adequate with cotton where it is now, spinners are worrying over what will happen should cotton advance sharply. This would mean they would sell at the same price while their raw costs were mounting and this could mean nothing except smaller or no profit margins for them. Bulk of demand for such yarns is now for war work with more than half of combed and approaching that much carded going into war orders. Worsted knitting spinners are turning more to war work and have less such yarns to offer the civilian trade due to the war allotment basis that leaves little room for civilian work. Rayon yarns are tight due to larger demands from the civilian and war industries with more going into the latter uses.

Cotton Yarns

Under the General Maximum Price Regulation issued at the end of April, fluctuating ceiling prices for sales cotton yarns, which had been in effect for almost a year, were discontinued and in their place the new regulation substituted a fixed ceiling. The latter was based on the highest price touched in March for the average of ten southern spot markets which was 20.37 cents. This meant that sales cotton yarns from now on will sell at a fixed price basis irrespective of fluctuations in the price of raw cotton. If raw cotton declines in price the margins of spinners will expand to that extent whereas when cotton advances over the 20.37 cents level spinners' margins will diminish to that extent. In view of the fact that it is the intent to stabilize cotton and other farm products on a parity level it is not expected that movements in raw cotton are apt to become too wide.

This new price regulation has been fairly well received by spinners and distributors of cotton yarns but they are concerned with the possibilities involved in a fixed price for their own product and fluctuating costs of such items as raw cotton and labor. Carded spinners as a rule gave the new regulation more general approval than did combed spinners. The latter pointed out that while their profit margins are adequate in many cases there are other instances where profits, they claim, would be entirely wiped out should raw cotton advance considerably over its present level. Selling under this new arrangement has been in progress now for a week and the initial effect has been to curtail new business but this is regarded as a natural development under the circumstances with sellers desiring to study their position under the new regulation before adding to their backlogs. Buyers at the same time were less anxious to operate as many had placed a large amount of business just before the new rule went into effect.

It is becoming increasingly difficult to place new business in either carded or combed yarns for use in making civilian goods in view of constantly mounting demands from the armed forces. Yet there are estimates being made that not more than half of combed yarn production and less than this in carded is going into military garments and goods but civilian buyers are unable for the time being to place orders more freely because most spinners are sold ahead through August and will not open their books for additional poundage for the present. This means that there will be shortly more yarn available to civilian consumers unless quantities to be required by the armed forces are expanded faster than the trade now expects. In combed yarns it has been impossible over the last month to place sizable orders in any count whereas in carded qualities it has been possible to place civilian business freely in coarse ply numbers and a fair amount in coarse count single carded. The Office of Price Administration, in explanation of the fixed yarn ceiling, discounted the threat to spinners profit margins involved in the Maximum Price Regulation, claiming that raw cotton could advance several cents before this would occur, but combed spinners on the other hand charge that the OPA had figured their margins only during the two best years they had during a long period and that it did not take into consideration the many years following the 1929 depression in which only losses were reported.

Rayon

The amount of rayon yarn available to makers of civilian goods is apt to diminish over the coming months in view of the much larger quantities of this type yarn that are and will be used by the armed forces. Reports have indicated that the Government at recent conferences with representatives of the rayon industry outlined much larger needs for high tenacity yarns which are to be used in various types of military equipment. According to reports in the market, the bulk of the high tenacity yarn will be furnished by the two largest viscose producers, one medium-sized producer and one of the acetate producers. These companies all have had experience in turning out this type of rayon and it will be easier to convert additional machines in their plants than to change over some other units. This, however, does not mean that several other producers will not be called on to make high tenacity rayon at a later date.

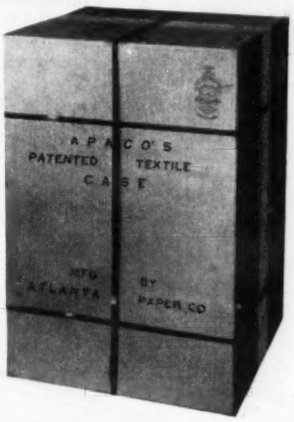
Hosiery manufacturers operating fine gauge machines will be given preference in deliveries of fine denier sizes from the amount of viscose and cuprammonium rayon yarn which has been set aside for hosiery under a previous order. The amendment also increases the amount of rayon yarn a manufacturer, jobber, merchant yarn converter or fabric converter may own or control at any time to one and one-half times the inventory formerly allowed. This provision is added to allow sufficient time for processing the yarn prior to the knitting or weaving operation. Under this amendment a producer of viscose and cuprammonium yarns in distributing his 50 and 65-denier size reserve yarn must give first preference to hosiery manufacturers who operate knitting machines of 51-gauge and finer, producing full-fashioned hosiery or machines of 360-needle and finer producing seamless hosiery.

Domestic production of rayon yarn plus staple fiber amounted to 153,900,000 pounds during the first quarter of 1942. While this total was slightly under the 155,100,000 pounds produced in the last quarter of 1941, it nevertheless is 17 per cent greater than the 131,200,000 pounds produced during the first quarter of 1941. Yarn production alone amounted to 117,100,000 pounds in the first quarter of 1942 which was slightly below the all-time record.

Worsted Yarns

Spinners of worsted outerwear yarns are in a very difficult position due to the severe wool conservation order for the second quarter which permits them to run only a small portion of their machinery when on civilian goods. In view of this most of them have discontinued making straight worsted knitting yarns for the civilian trade and instead are producing yarns either for military uses or blended types containing a large percentage of cotton, mohair and rayon or in cases coarse wools. Several spinners in this vicinity have discontinued making any knitting counts whatever and have switched their production over so far as possible to yarns for military purposes. Data for the first quarter of this year indicate that production of knitting yarns will be considerably smaller this year while sales spindles making weaving counts are going along at about the same rate of a year ago or possibly a little better.

For the Textile Industry



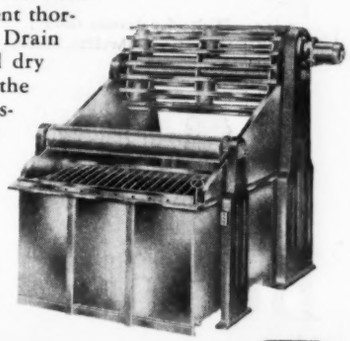
- TEXTILE CORRUGATED CASES
- REINFORCED PAPER BALE & ROLL WRAPS
- KRAFT PAPER • TOILET PAPER
- CUSPIDORS • GUMMED TAPE

ATLANTA PAPER COMPANY
Atlanta, Georgia
Established 1868

TO TEXTILE DYERS DOING A WAR JOB
CLEAN EQUIPMENT *thoroughly and often*

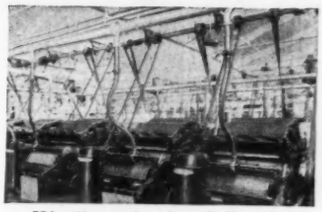
Keep war production moving by keeping your stainless steel equipment at top efficiency Regardless of the solution you use, clean your equipment thoroughly at least once a week. Drain it, wash with hot water and dry with an air hose, or brush the bottom as free of water as possible and then let it dry. This is your duty under the all-out war production program.

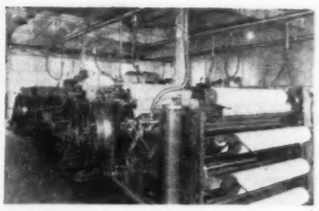
All orders subject to Government priority regulations



SPECIALISTS IN THE MANUFACTURE OF STAINLESS STEEL DYEING EQUIPMENT

S. BLICKMAN, INC.
106 GREGORY AVE., WEEHAWKEN, N.J.
EST. 1889


554 cotton cards automatically stripped by Abington Vacuum System

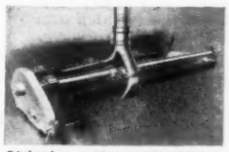

Abington Vacuum stripper on 3-card set in a prominent woolen mill

ABINGTON VACUUM CARD STRIPPING & WASTE COLLECTING

√ *saves* ***TIME***

√ *conserves* ***MAN-POWER***

Among the numerous benefits are:


Stripping cotton card cylinder and doffer automatically by vacuum.

INCREASED PRODUCTION

With the Abington system, one man strips 675 cotton cards once per 8-hr. shift. Less card down time increases production at least 4% on cotton, while on wool the increase often equals an extra set of cards.

Collecting card undersereenings.

IMPROVED QUALITY

Elimination of brushes assures maximum effectiveness of fibre separation by keeping wire faces sharper and wire bends truer. Ease and speed of operation often permit an extra stripping per shift as added Product-quality Insurance.

Waste Station used to collect flat strips, comber noil and other process waste.

MAXIMUM CLEANLINESS

Vacuum stripping and process waste collecting makes an easy task out of "the dirtiest job in the mill". Protects operators against inhaling clouds of brushed-up dirt and fly. Takes the back-breaking grind out of cleaning under machinery. Removes process waste to a central waste house without trucking through the aisles. Promotes clean floors and clean machinery in various departments where conveying is used, enhancing cleanliness of product.

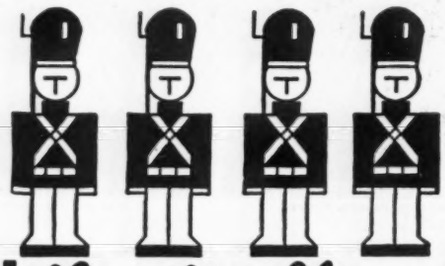
Floor sweeping by vacuum doesn't just move, but really REMOVES the dirt and fly.

Used in some 700 mills both cotton and wool

Send for illustrated Stripper Bulletin

ABINGTON

ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.
Card Strippers — Yarn Dyeing Systems — Weaver's Knotters
OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.



Uniformity *Always!*

—with Seyco Sizing

("SI-CO")

Constant uniformity in quality and performance is guaranteed in every shipment of Seyco Sizing.

Its absolute dependability in this respect has earned for Seyco Sizing such consumer acceptance that the plant in which it is produced is now the largest and most modern of any specializing in warp sizing.

OTHER PRODUCTS
Softeners
•
Shuttle Dressing
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Seyco Sizing is packed for convenience in tight, rust-proof, non-absorbing steel drums, which can be stored indefinitely.

SEYCO

"A company is known by the customers it keeps"

Seydel-Woolley & Co.

Textile Chemicals

748 Rice St., N.W. ATLANTA, GA.

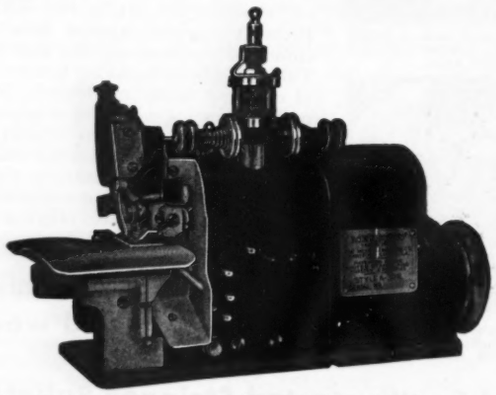
Established 1838

TRADE MARK
MERROW

Incorporated 1894

For Overseaming and Overedging with maximum efficiency at high speed and low operating cost modernize with the

MERROW CLASS A MACHINES



Also Plain Crochet and Shell Stitch Models for Ornamental Edge Finishing and Class 60 Machines for Butt Seaming.

—200 VARIETIES FOR 200 PURPOSES—

Write for details and let us demonstrate these machines on your own fabrics.

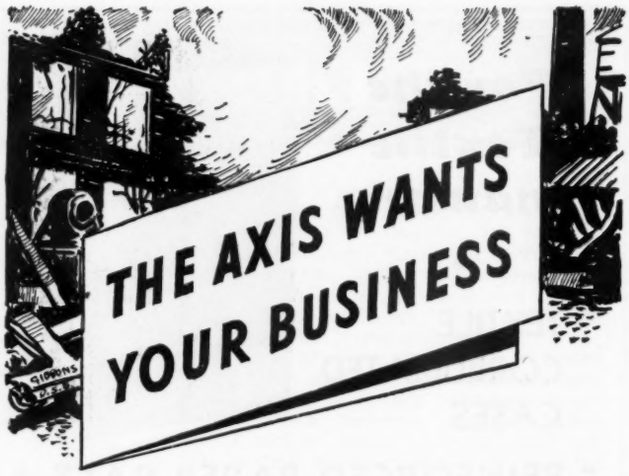
THE MERROW MACHINE COMPANY

Starting Its Second Century

2805 LAUREL STREET HARTFORD, CONN., U. S. A.

E. W. HOLLISTER, P. O. Box 721, SPARTANBURG, S. C.

R. B. MORELAND, P. O. Box 885, ATLANTA, GEORGIA



THIS is more than a war of mechanical monsters clashing in the night . . . more than a war of production.

It is a war for markets—*your* markets! The Axis wants your business—wants to destroy it for once and all.

With so much at stake, there is no doubt you will want to do everything you can to meet this Axis threat. Two ways are open: Speed production and BUY BONDS. The only answer to enemy tanks and planes is *more* American tanks and planes—and your regular, month-by-month purchases of Defense Bonds will help supply them. Buy now *and keep buying*.

HOW THE PAY-ROLL SAVINGS PLAN HELPS

When you install the Pay-Roll Savings Plan (approved by organized labor), you not only perform a service for your country but for your *employees*. Simple to install, the Plan provides for regular purchases of Defense Bonds through voluntary pay roll allotments.

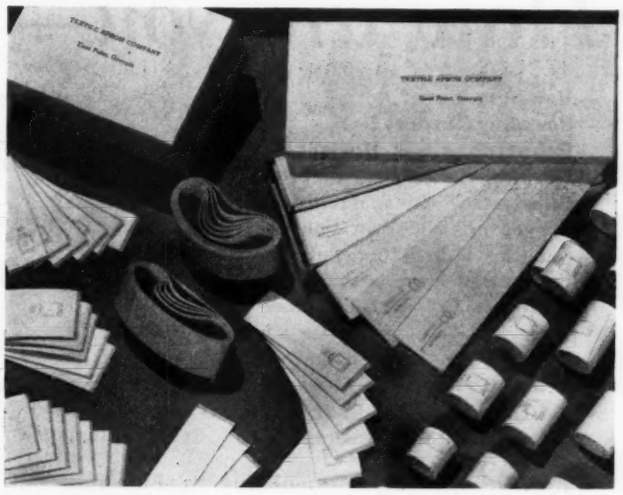
Write for details *today!* Treasury Department, Section R, 709 Twelfth Street, NW., Washington, D. C.

U. S. SAVINGS

Bonds ★ Stamps

This space is a contribution to Victory by

COTTON



Open Type and Closed Type Leather Aprons for All Long Draft Systems

Our Modern, Efficient Production Means

BETTER Aprons, QUICKER Delivery LOWER Prices!

Many of the most used sizes are kept in stock and orders can usually be filled very promptly

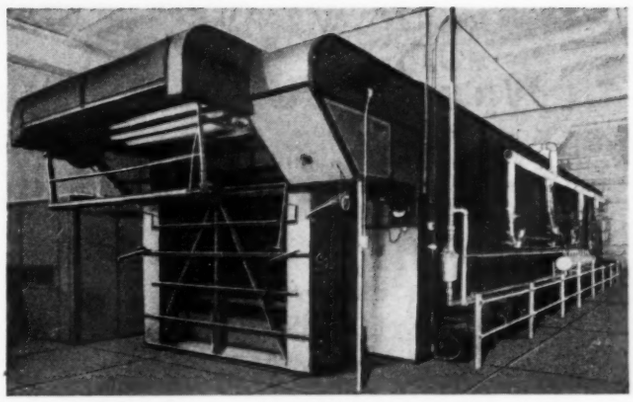
Aprons to any specifications or to match samples on short notice.

All orders are shipped *prepaid* via railway express or parcel post.

Send us a trial order . . . satisfaction guaranteed, or you pay no money. Samples of our Aprons will be sent free. Let us have your specifications and samples, or let us know your machinery or system.

Write for Free Samples

Textile Apron Company
East Point, Georgia
J. B. KENNINGTON, OWNER



You Can "Deliver the Goods" *Faster* With "NATIONAL" *War Production* Dryers!

If you are working on war contracts but are having trouble meeting delivery commitments and quality requirements, then you should take steps *now* to install "NATIONAL" Automatic Dryers or to rebuild your present equipment to incorporate the latest "NATIONAL" features, *without interrupting present production schedules.*

Finishing Plants and Departments operating these modern units are getting the cream of this war-time business, because the speed at which they dry woolens, cottons, rayons and mixed goods to the most exacting standards of quality cannot be equalled with dryers of any other type.

"NATIONAL" builds dryers and other textile processing equipment for every need. Write, today, for descriptive literature, or ask to see representative.

Automatic Loop Dryers
Package Yarn Dryers
Print Goods Dryers
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Apron Stock Dryers
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THE NATIONAL DRYING MACHINERY CO.

N. HANCOCK ST. and LEHIGH AVE., PHILADELPHIA, PA.

New England Agent: C. H. INGALLS, Providence, R. I.

A *New* SOLUBLE GUM

BENGAL GUM

EXCELS { TRAGACANTH, LOCUST, KARAYA }

for TEXTILE and OTHER INDUSTRIAL PURPOSES

HIGH VISCOSITY *LOW COST*

300 LB. BARRELS . . . 48c LB.

Smaller containers proportionately higher.

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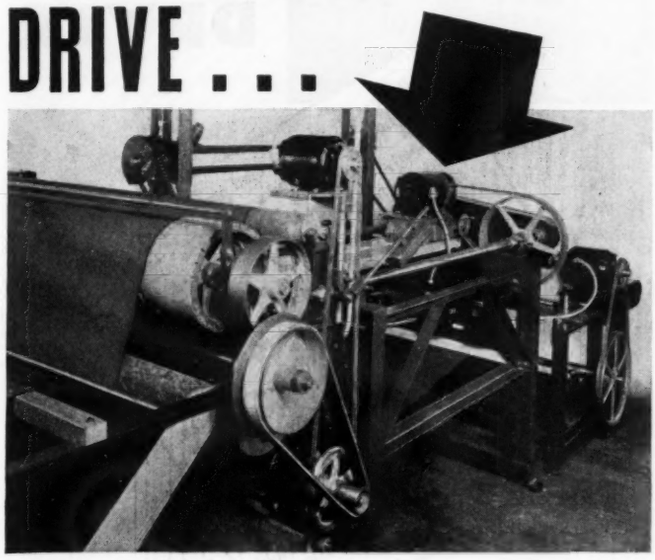

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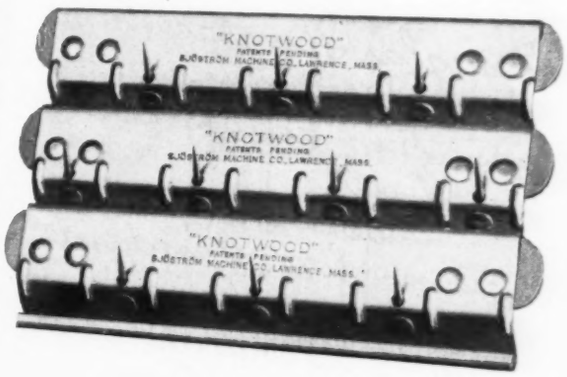

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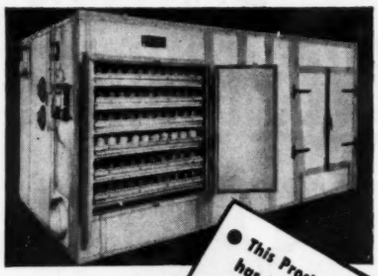

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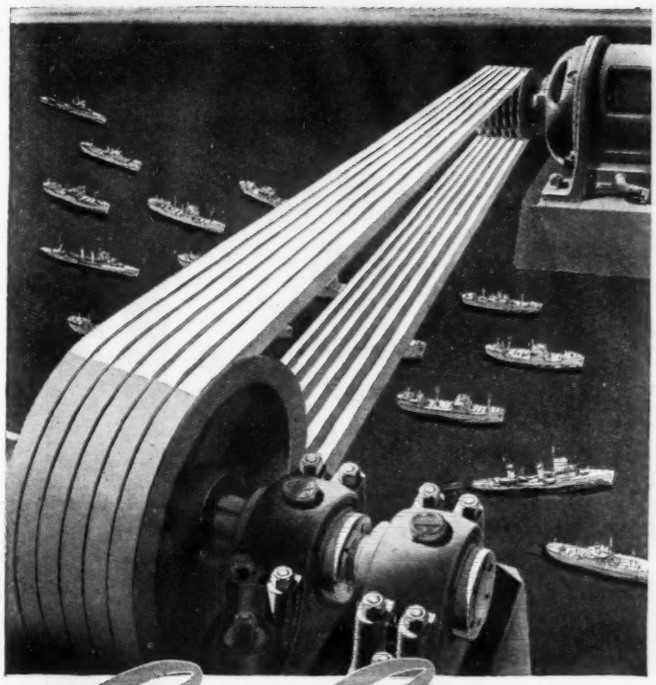

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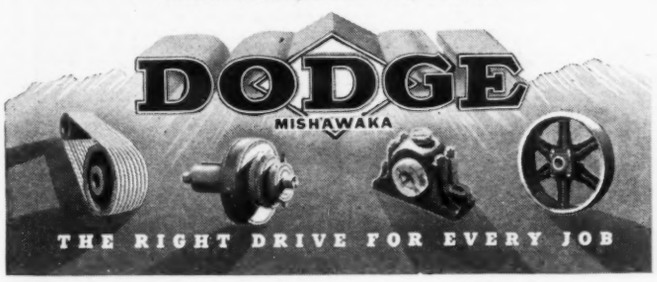

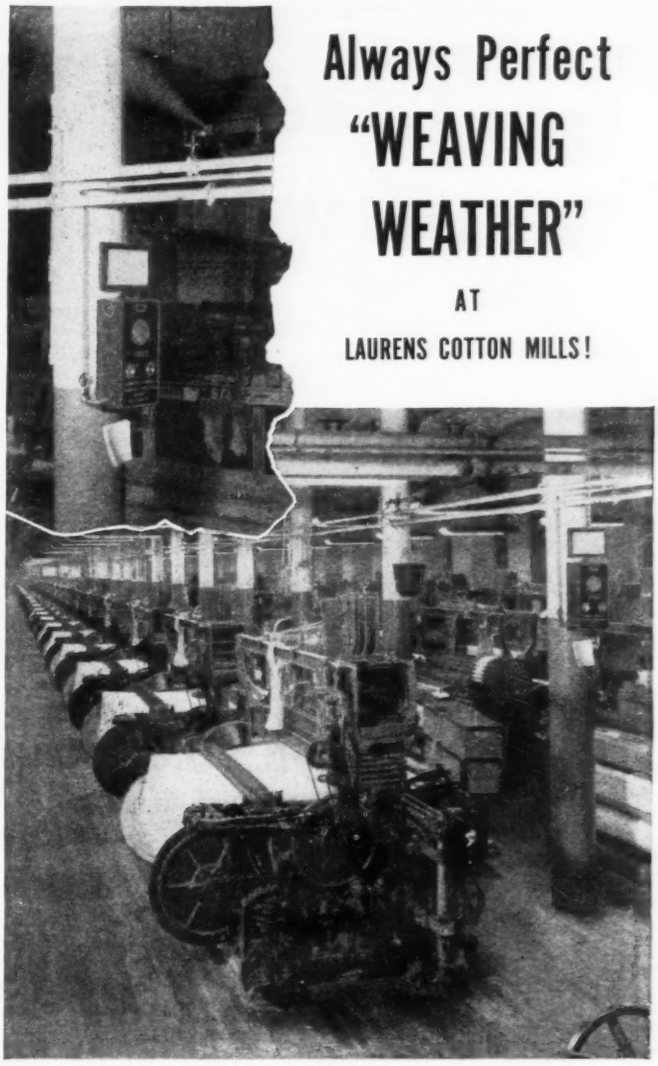

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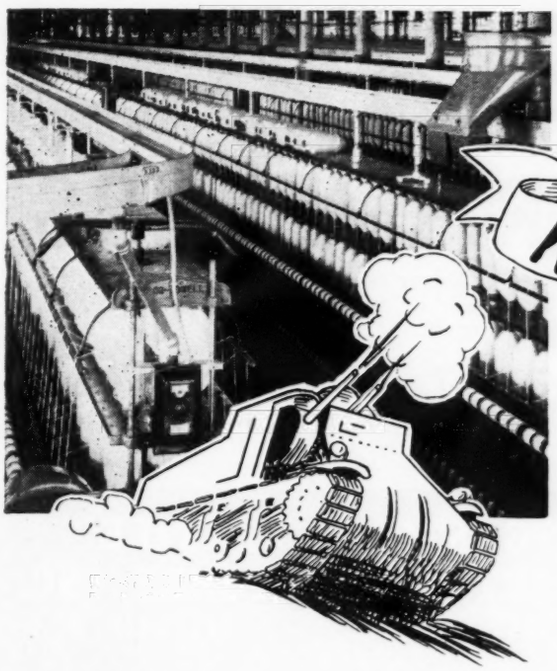

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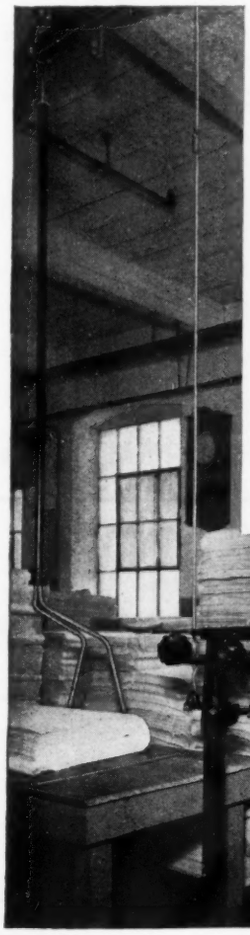

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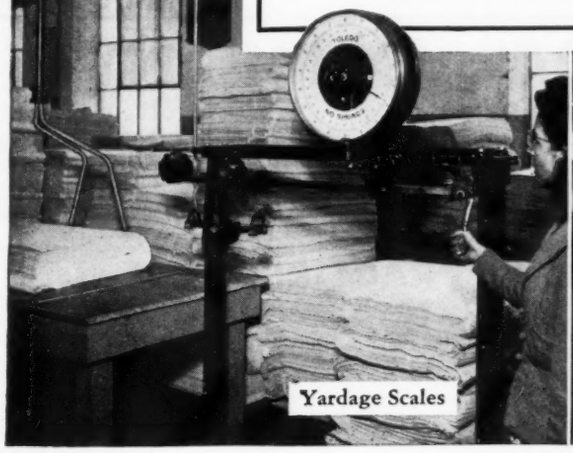
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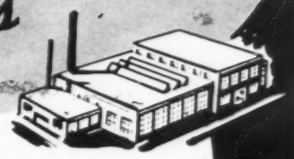

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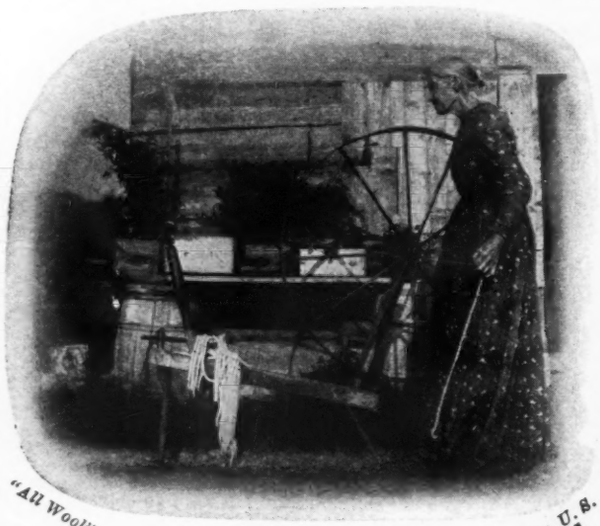

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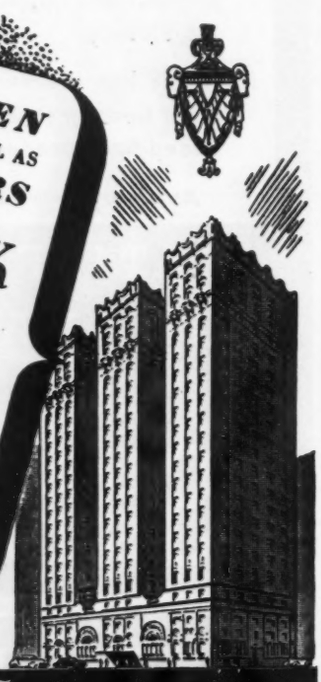

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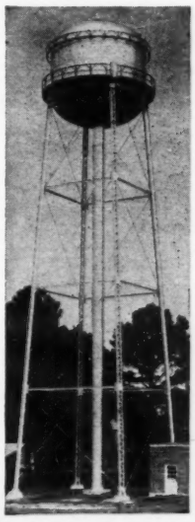

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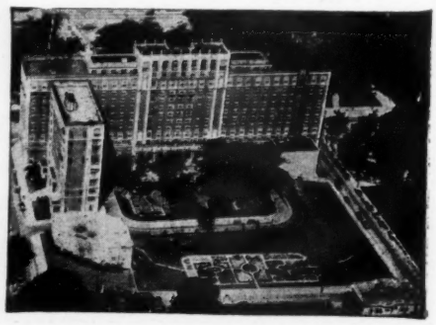

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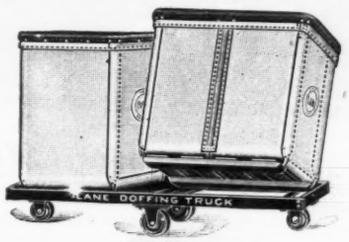

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1—132 sp. Saco Lowell, 3½" Eadie rings, 4½" gge., 9 ply, tape drive, 3/60/220 motor (1924).

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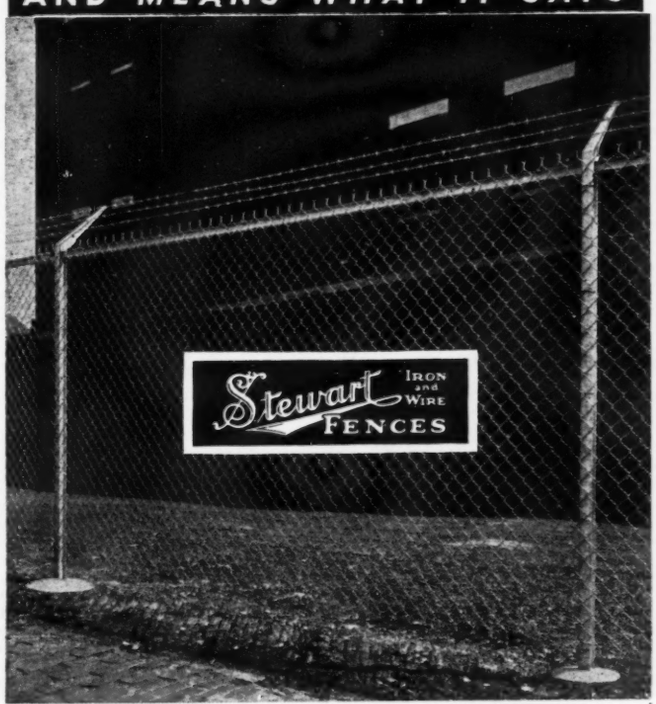

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for cottons, rayons and mixed goods

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FOR COTTON LACE AND MESH HOSIERY

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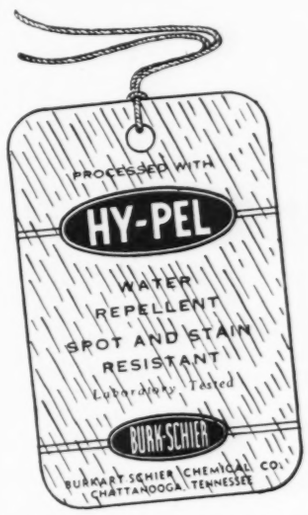
WATER REPELLENT

for

COTTONS
RAYONS
WOOLENS



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BURKART-SCHIER CHEMICAL CO.

BURK-SCHIER CHATTANOOGA, TENNESSEE BURK-SCHIER

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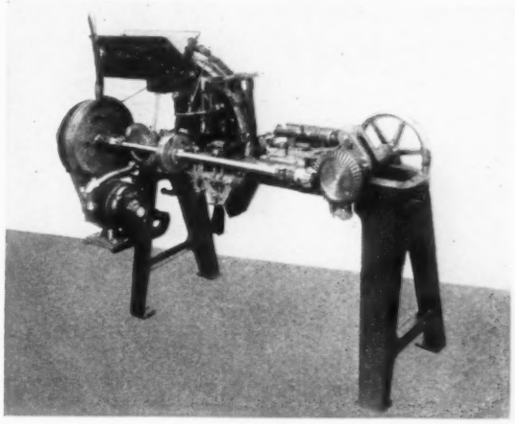

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BOBBIN STRIPPER

HIGH CLEANING CAPACITY
Protects barrel and finish
Usually pays for itself in one year—always within 18 months

Complete information promptly furnished upon request

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